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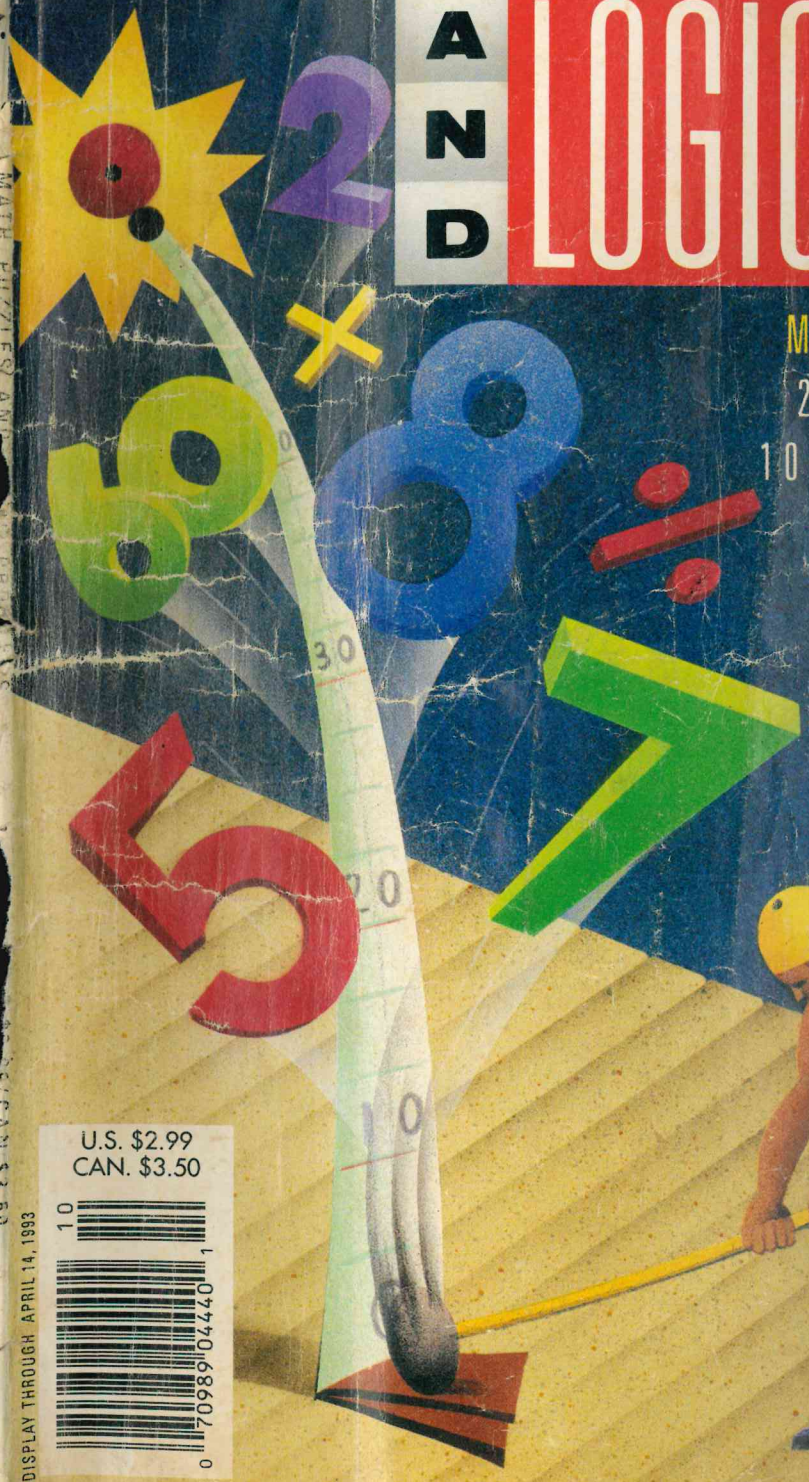

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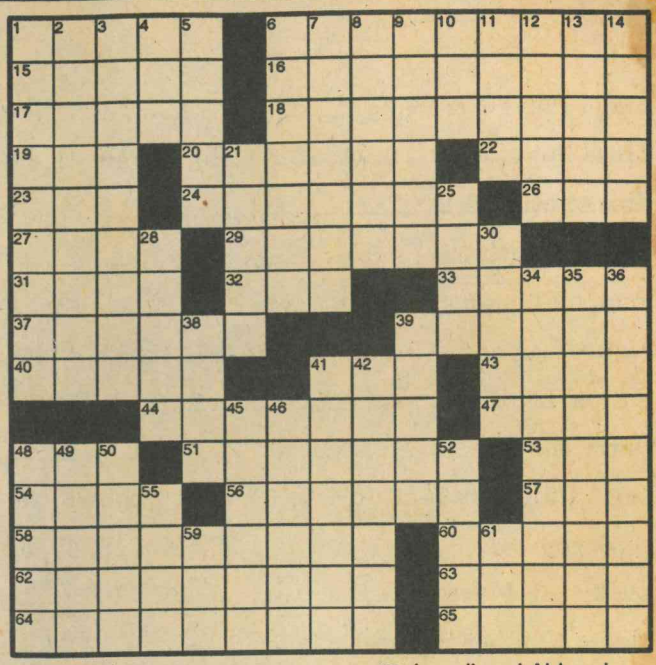

ACROSS

1 Locale in *The Odyssey*
6 Spectral
15 Guarantees
16 Membership
17 Transplant
18 Inexact numbers
19 Indonesian islands
20 Shortstop Kevin
22 Drive away
23 Inn type
24 Dry areas
26 Wee
27 At leisure
29 Uncovers
31 Roulette bet
32 *From Here to Eternity* extras
33 Inverness features
37 Pack
39 Ali, e.g.
40 Vaquero's gear
41 Angel's favorite letters
43 *Family* mom
44 Ragtime dance
47 Beast of *Bürde*
48 Word before jump or lift
51 It may be underfoot
53 Lincoln was one
54 Tennis name
56 Mexican resort
57 Center of comparisons
58 Detached
60 Squash tool
62 Keyboard technique
63 Clan symbol
64 Cosmetic ingredients
65 Bee's leftovers

DOWN

1 Mountaineer's ring
2 Finished
3 __ *de Venezuela*
4 Back
5 Spanish 101 word
6 One way to get a lift
7 Video-display lines
8 Corporate trainee
9 Goes around
10 Melt-resistant product
11 Way over yonder
12 Puente and Jackson
13 Appendix neighbor
14 *Pelota* catcher
21 "I can do it!"
25 *Star Trek VI* captain
28 Calliope's relative
30 Ad-hoc force
34 Elegant ones
35 Hunting game
36 Colts, for instance
38 Asian capital
39 Finish the dirty work
41 Dried-bouquet plant
42 Bowling-tourney requests
45 Comm. Perry's HQ
46 *Lucia di Lammermoor* highlight
48 Ismail and Abbas I, for two
49 Ruined
50 Senseless
52 *Mary Hartman, Mary Hartman* role
55 Cheer start
59 Blocks of fame
61 Debt offering

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Calendar of on-sale dates for Dell puzzle magazines is on page 63.

Cover illustration by Coco Matsuda

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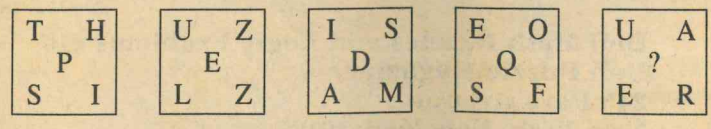

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LETTER FROM THE EDITORS

Whew! The last few weeks here at Dell have been a whirlwind of activity, resulting in the issue of *Dell Math Puzzles and Logic Problems* you now hold in your hand. Those of you who have been eagerly awaiting this issue since the last one appeared may notice that it's here sooner than was originally scheduled. That's because (drum roll, please) *Dell Math Puzzles and Logic Problems* will now appear four times per year instead of three. The credit for this change belongs entirely to you, the solvers — you have our heartfelt thanks for making this magazine a success, at a time when a new magazine has a less-than-wonderful chance of survival.

We thank you especially for the heroic efforts many of you have made to obtain copies of *Math and Logic*. Your letters have described visits to every magazine retailer in town, drives of up to 100 miles, phone calls to friends and relatives in other parts of the country to put them on the prowl as well. These letters, after they are read by the editors, are passed on to our circulation department, to be used as ammunition with the wholesalers and distributors who determine where and in what quantity a magazine is shipped. We hope that you will soon see the results of your efforts reflected in wider availability of *Math and Logic* and the other magazines you've told us you want but can't find.

Now that this issue is complete, we are pleased to welcome you to *Dell Math Puzzles and Logic Problems #10*. Its 15 Logic Problems will take you from "once upon a time" to the days of the California Gold Rush to right this very minute; most feature a standard solving chart. We've included Cubic, Diagramless, and Story versions among the 10 Figure Logics; and starting helps for all ten are tucked safely away on page 63, where you need never see them if you don't want to. You'll find an even dozen of the popular puzzle Number Place; and Three-Ring Circuits — not seen since *Math and Logic #2* — makes a comeback here. We also have a brand-new feature. It arrived at our office unexpectedly, not long ago, via fax from England. It's called Trigons; and we think Cross Sums fans in particular and number puzzle fans in general will like them quite a lot. There are two here to try your hand at.

Math and Logic solvers as a group have been among our most forthcoming, articulate correspondents. Our thanks for that, too. We look forward to hearing your opinion of Trigons, as we love to hear your thoughts on anything and everything in this magazine. Please continue to write or fax your comments to:

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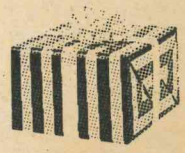

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LOGIC PROBLEM

1. MUSICAL CHAIRS

by MARY MARKS CEZUS

Four young, photogenic single people recently moved into the four courtyard apartments at Elbows Place. Each of the four expected to spend a great deal of time sitting in the courtyard being admired by the other three (and any mere mortals who happened to pass by), so each one went off to the trendiest store to buy the very latest thing in sitting-and-being-admired chairs. Fashion being what it is, each of the four went to a different store (one was The Wood Shoppe) and bought a different style chair. So that afternoon found the four courtyard dwellers out on the patio in their new chairs, each feeling smugly secure that he or she was the hippest of the four. From the following clues, can you determine each one's full name (one last name is Shaw), the style chair each bought, and the store each bought the chair from?

1. Justin and the one who bought the Shaker chair agree that House Fair is definitely NOT the place to shop.
2. Neither Nathan nor the one whose last name is Hudson would ever set foot in Meadowlane.
3. The one who bought the Shaker chair (who is not Rachel) did not shop at Beginnings; nor did Justin.
4. The one whose last name is Ladd (who is not Nathan) did not shop at House Fair; the Adirondack chair was not bought at House Fair.
5. Hudson and Claire agree that the bent-twig chair was not the cool choice.
6. The one whose last name is Cooper looked condescendingly at the occupant of the English country chair.
7. Claire (who did not buy the Shaker chair) thinks the merchandise at Beginnings is not at all hip.

Solution is on page 59.

If you care to use the chart below in solving this problem, you do so by entering all information obtained from the clues using, perhaps, an X to indicate a definite "no" and a dot to show a definite "yes." Remember: Once you enter a definite "yes" (dot), place a "no" (X) in all the rest of the boxes in each row and column that contains the dot.

	Cooper	Hudson	Ladd	Shaw	Adir.	bent twig	Eng.	Shak.	Begin.	House Fair	Meadow.	Wood Shop
Claire												
Justin												
Nathan												
Rachel												
Beginnings												
House Fair												
Meadowlane												
Wood Shoppe												
Adirondack												
bent twig												
Eng. country												
Shaker												

LOGIC PROBLEM

2. PANNING FOR GOLD

by WILLIAM ORGAN

Way back in the days of the miner 'forty-niners, men would leave their families and move out west hoping to strike it rich. They lived in hotels, working in the mines for wages by day and trying their luck panning for gold when they weren't at the mines. Five such fellows were staying at the Hotel National. Each of the five had only recently come to America — one from Scotland, one from Cornwall, two from Wales, and one from Ireland. Late one night, Bob and the other four got to talking about how it was just a matter of time before they were going to be as wealthy as Cornelius Vanderbilt. From the clues to follow, can you determine each one's full name (one is Mr. Jackson), the country from which he'd come, the mine where he worked by day (one was the Empire Mine), and the number of ounces of gold he said he'd panned in the last week?

1. All five had moved out west at about the same time, but the two from Wales had been the last to arrive.
2. George panned the most gold — 8 ounces. He had arrived in the gold fields before the man from Ireland but after the one from Cornwall.
3. Cyril panned twice as much gold as Mr. Berry, but only half as much as the man from Scotland. Both Cyril and Berry had come from Wales.
4. Tom Jones, who worked at the North Star Mine, was not from Cornwall. He panned 5 ounces.
5. Mr. Haven worked at the Champion Mine. He panned 3 ounces.
6. Fred worked at the Central Mine.
7. The man who worked at the Lost Hill Mine panned less gold than Mr. Gates.

Solution is on page 59.

	Berry	Gates	Haven	Jackson	Jones	Corn.	Ire.	Scot.	Wales	Wales	Cent.	Champ.	Emp.	Lost Hill	North Star	ounces				
																				8
Bob																				
Cyril																				
Fred																				
George																				
Tom																				
ounces																				
8																				
Central																				
Champion																				
Empire																				
Lost Hill																				
North Star																				
Cornwall																				
Ireland																				
Scotland																				
Wales																				
Wales																				

PROPORTIONAL PAIRS

A square, which has 4 sides, is to an octagon, which has 8 sides, as 4 is to 8, or as 1 is to 2. Below are similar proportions. Check them as correct or incorrect, and when you're through, turn to page 63 to see whether you are in or out of proportion.

1. Solo is to sextet as 1 is to 6.
2. Goldilocks' bears are to Snow White's dwarves as 4 is to 7.
3. Triangle is to hexagon as 1 is to 3.
4. Pints in a quart are to teaspoons in a tablespoon as 2 is to 3.
5. Mittenless kittens are to blackbirds baked in a pie as 1 is to 4.
6. Pair is to dozen as 1 is to 6.
7. Days of the week are to signs of the zodiac as 7 is to 13.
8. Nose is to toes as 1 is to 10.
9. Members of the U.S. Senate are to the Beatles as 25 is to 2.
10. Olympic rings are to primary colors as 5 is to 3.
11. Horsemen of the Apocalypse are to Hills of Rome as 4 is to 7.
12. Commandments are to the Pentateuch as 2 is to 1.

THREE-RING CIRCUITS

The goal here is to circle three of the digits in each row across and each column down so that the circled numbers add up to the given totals. For example, the total for the first row in puzzle #1 is 15, so you might circle 1, 5, and 9; 5, 6, and 4; or 9, 4, and 2. Using the totals for rows and columns together will tell you which numbers to circle. For example, the total for the sixth column in puzzle #1 is 17; there are no combinations adding to 17 which can include the 2 in the top row, so that 2 will not be circled; and you can eliminate 9, 4, 2 as a possible combination for the first row.

Solutions are on page 58.

1.

1	5	9	6	4	2 = 15
9	8	1	5	1	8 = 21
6	3	6	2	7	1 = 19
9	7	8	3	2	5 = 20
7	6	4	2	4	9 = 13
3	5	8	3	7	4 = 15
‖	‖	‖	‖	‖	‖
16	20	22	13	15	17

2.

2	4	7	5	6	3 = 14
1	6	8	2	2	5 = 19
9	7	4	8	7	9 = 22
9	2	9	6	4	1 = 12
8	6	3	1	8	7 = 18
4	5	1	3	3	5 = 12
‖	‖	‖	‖	‖	‖
14	15	18	19	14	17

WORD ARITHMETIC

These are long-division problems in which letters are substituted for numbers. Solve the problem; determine the number value of each letter; and, when the letters in each one have been arranged in order from 0 to 9, they will spell out a word or words.

Solutions are on page 63.

1.

0 1 2 3 4 5 6 7 8 9

```
          T E A L
      ------------
OAF | A P P A R E L
      L O M A
      ---------
        F T P R
        F L D A
        -------
          L L F E
          L P F E
          -------
            L P P L
              O A F
              -----
              F M M
```

2.

0 1 2 3 4 5 6 7 8 9

```
            C H I C
        ------------
COPE | R E C E I P T
       E H I P
       -------
         I I E I
         I P U C P
         ---------
           K K I P
           C O P E
           -------
             R P E T
             E H I P
             -------
               R H T
```

3.

0 1 2 3 4 5 6 7 8 9

```
          H I S
      ------------
EACH | L O C A L E
       E A C H
       -------
         G E C H L
         G H S C I
         ---------
           N G H H E
           N H A C S
           ---------
             A L C L
```

4.

0 1 2 3 4 5 6 7 8 9

```
          D U N
      ------------
DUET | E N C H A N T
       H H S C N
       ---------
         E C N N N
         E A P S C
         ---------
           N A S D T
           D U E T
           -------
           C A N S
```

5.

0 1 2 3 4 5 6 7 8 9

```
          A L P
      ------------
SODA | O O D L E S
       S O D A
       -------
         L T T A E
         A K H T L
         ---------
           S K A L S
           S A S D P
           ---------
           A E S H
```

6.

0 1 2 3 4 5 6 7 8 9

```
          L A C
      ------------
CALL | S A D D L E
       C A L L
       -------
         P O L L L
         D T C A A
         ---------
           A A C H E
           P E A C C
           ---------
           C D L D
```

7.

0 1 2 3 4 5 6 7 8 9

```
          F I T
      ------------
SOLO | S H I F T E D
       I T E I S
       ---------
         O E E E
         S O L O
         -------
           S D I D D
           S S I E L
           ---------
             T G E
```

8.

0 1 2 3 4 5 6 7 8 9

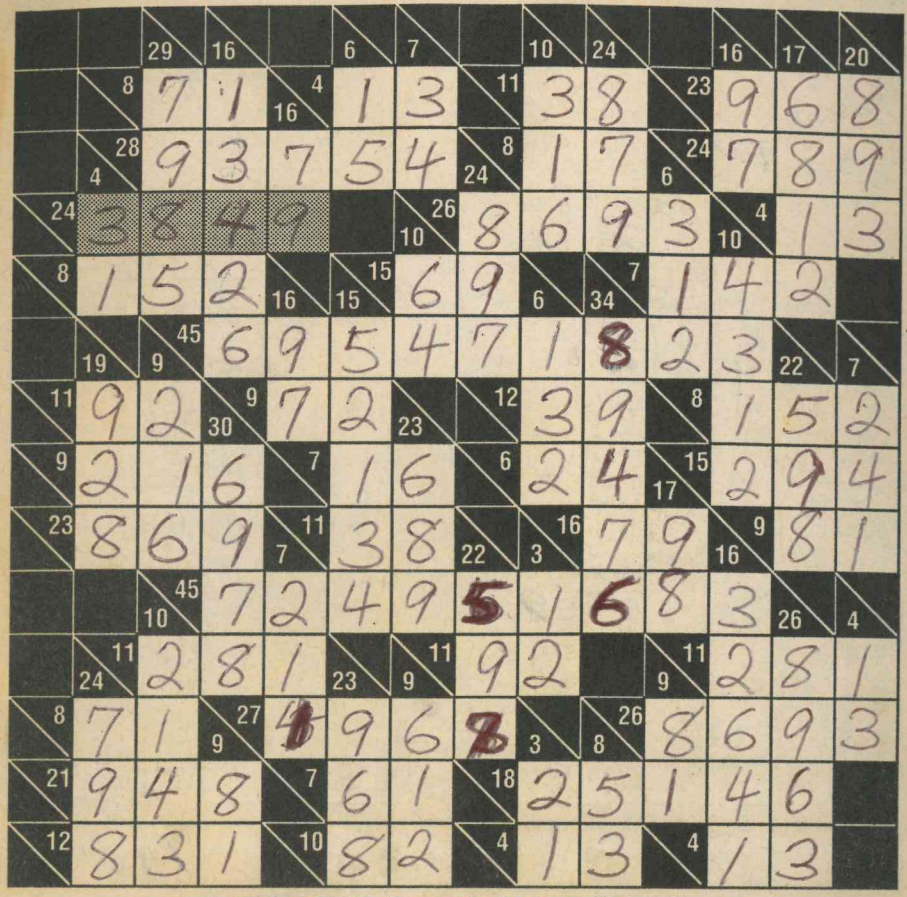
```
            H E R
        ------------
NERD | W A N D E R
       N E R D
       -------
         H E E S E
         H S A I L
         ---------
           H I E A R
           H N I H I
           ---------
           H N E W
```

9.

0 1 2 3 4 5 6 7 8 9

```
          G L I B
      ------------
SIT | G R E A T E R
      I L C G
      -------
        E A G T
        E C G L
        -------
          S L E
          S I T
          -----
            E I R
```

CROSS SUMS



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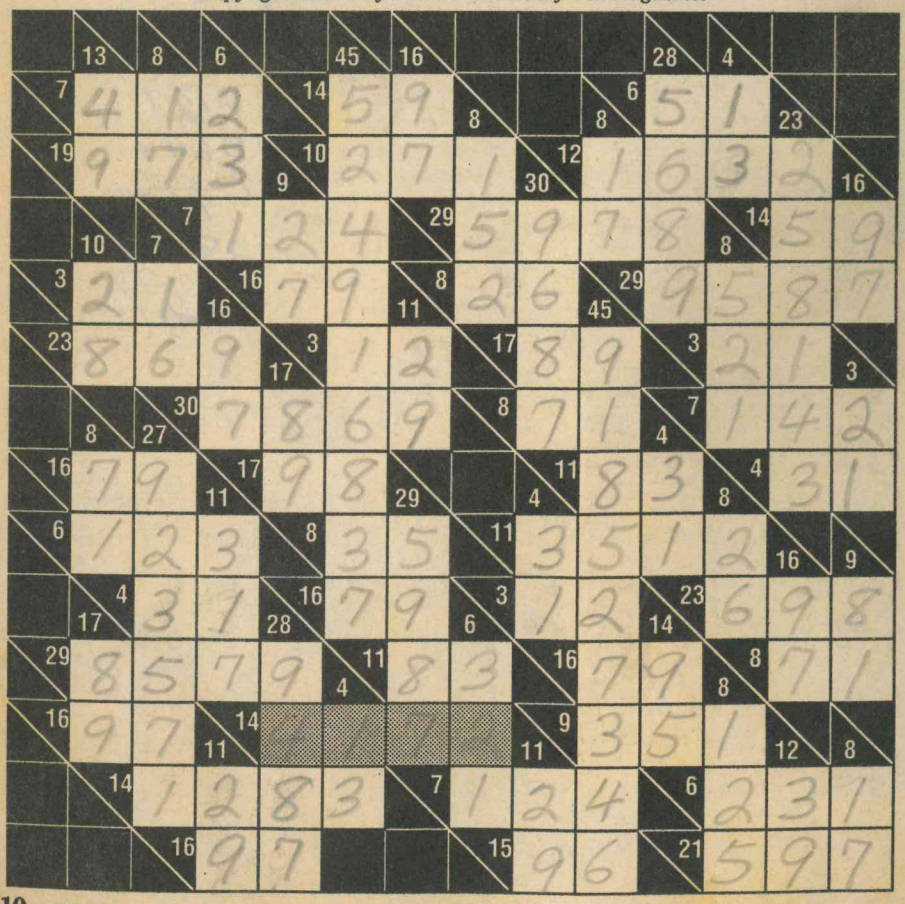
NUMBER 1

In Cross Sums puzzles, the numbers in the black squares refer to the SUMS of the digits which you are to fill into the empty spaces. The number ABOVE the diagonal line refers to the empty spaces directly to the RIGHT of that number. A number BELOW the diagonal line refers to the empty spaces directly BELOW that number.

No zeros are used here, only the digits one through nine. An important point: A digit cannot appear more than once in any particular digit combination. We have shaded one area in each diagram. If you need help starting a puzzle, the digit combination to go into its area is listed on page 63.

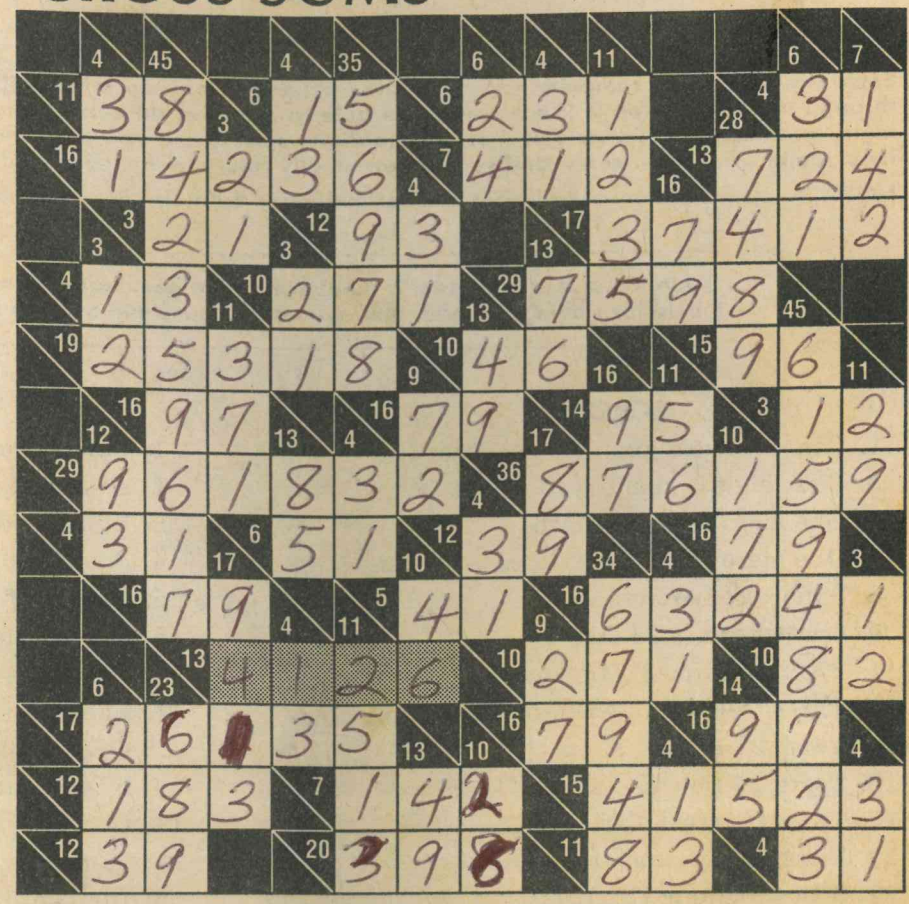
Solutions are on page 56.



NUMBER 2

CROSS SUMS

NUMBER 3



Solutions are on page 56.

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NUMBER 4

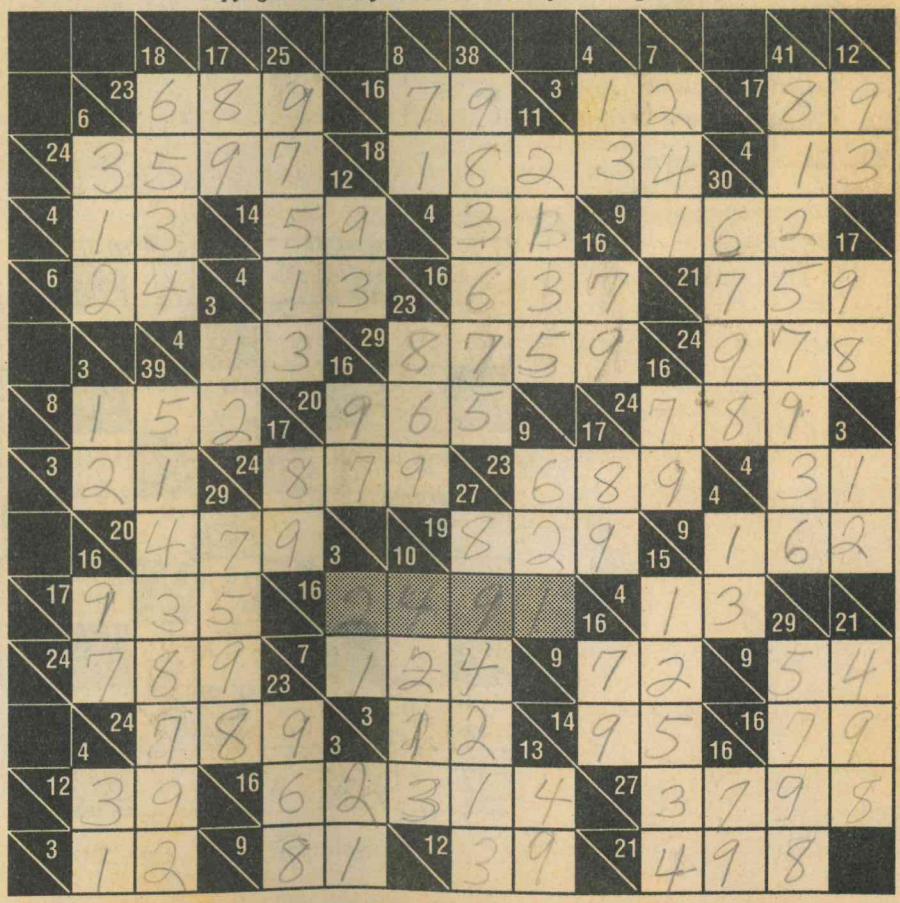

FIGURE LOGIC 1

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Solve Figure Logic by completing some simple arithmetic problems, which will enable you to move from clue to clue through the puzzle. You will not always be able to complete an entire number at first, but you may be able, by logic, to determine what one or more of the digits must be. If you enter those digits into the diagram, they may help you to solve other clues, and you can eventually return to the unfinished numbers and finally complete them.

NOTE: A square of a number is that number multiplied by itself. For example, the square of 6 is 36 (6 x 6 = 36).

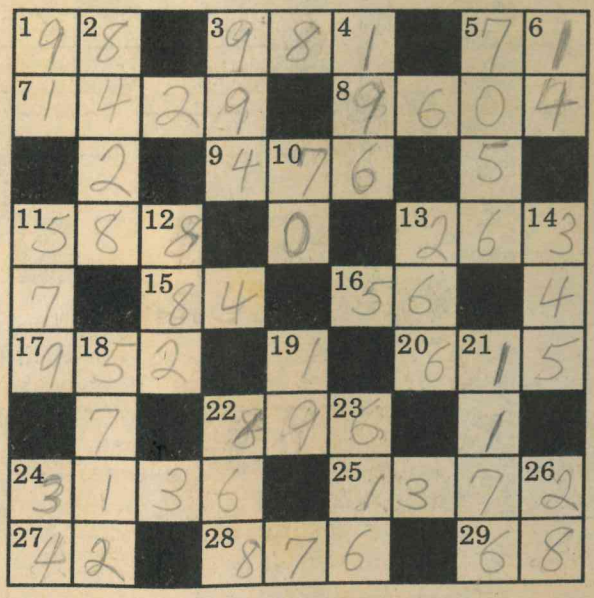
Due to solvers' requests, a number has not been entered into the diagram as a help for solving. Instead, the number that goes into 6-Down is listed on page 63.

ACROSS

1. Consecutive digits in some order
3. First digit is sum of last digits
5. One more than 10-Down
7. One more than three times 9-Across
8. Square of 1-Across
9. 6-Down times 24-Down
11. 27-Across times 6-Down
13. Three less than 13-Down
15. Twice 27-Across
16. Twice 26-Down
17. Twice 9-Across
20. First digit is sum of last digits
22. 3-Down minus 1-Across
24. Square of 16-Across
25. 1-Across times 6-Down
27. 6-Down plus 26-Down
28. Consecutive digits in some order
29. Twice 24-Down

DOWN

1. Seven more than 15-Across
2. 25-Across plus 5-Down
3. 5-Across times 6-Down
4. Square of 6-Down
5. Square of 15-Across
6. One-seventh of 1-Across
10. 27-Across plus 26-Down
11. Consecutive odd digits
12. 6-Down plus 22-Down
13. 6-Down times 19-Down
14. Consecutive digits
18. 15-Across times 29-Across
19. Digits of 1-Down reversed
21. Twice 11-Across
22. 17-Across minus 15-Across
23. One more than 20-Across
24. Six more than 26-Down
26. Twice 6-Down



Solution is on page 58

LOGIC PROBLEM

3. THE NAME'S THE SAME

by MARGARET EDMISTON

Pete Porter, the mailroom clerk at Central Blickpunting, Inc., smiled to himself. "Here we go, another letter addressed to J. Johnson. Does it go to Jeff Johnson or Jessica Johnson?" Sorting the mail used to be easy, but since Central Blickpunting expanded, five such pairs of employees with the same last name and first initial have been hired — interestingly, each pair is a man and a woman and none are related. Together, the ten perform five different kinds of jobs, with each job — including quality-control clerk — performed by one of the men and one of the women. From the clues to follow, can you deduce which two workers do each job?

1. Ralph Rojas is a bookkeeper; Ruthanne Rojas is a machine operator.
2. Ted Thompson and Tammy Thompson don't have the same job title; neither is a secretary.
3. One pair with the same surname do the same job.
4. The woman who is a word processor and the man who is a machine operator have the same surname.
5. Eddie Evans is a secretary, but Evie Evans is not.
6. Either Brad or Bethany Brown is a word processor; the other is not.

Solution is on page 59.

Enter the correct surnames next to each job title as you determine which man and which woman perform each job.

	female	male
bookkeeper	Evie Evans	Ralph Rojas X
machine operator	Ruthanne Rojas X	Brad Brown
quality-control clerk	Jessica Johnson X	Jeff Johnson X
secretary	Tammy Thompson	Eddie Evans X
word processor	Bethany Brown	Ted Thompson

THEY KEEP GOING...

Paul and Bob are very serious about their workouts, so much so that once they get going, they are usually at it for hours and hours. They both belong to the Iron Man Road Runners' Club, and they used to run together, but Paul developed knee trouble and his doctor has advised him to walk instead. So now they meet and start at the same place, sometimes taking the same course and sometimes heading in different directions; Paul walks at 3 miles per hour while Bob jogs at 6 miles per hour. This morning they got into an argument before starting their workout, so they took off in directly opposite directions. After how many hours were they 36 miles apart?

Solution is on page 61

NUMBER PLACE

In these puzzles, your job is to place a number into each box so that each row across, each column down, and each small 9-box square within the larger square (there are 9 of these) will contain each number 1 through 9. Remember that no number may appear more than once in any row, column, or 9-box square; this will help you solve the puzzle.

good deal, ANNETTE!

There are more Number Places on page 24.

1.

9	1	6	4	7	5	8	2	3
4	3	7	1	2	8	6	9	5
2	8	5	6	9	3	1	4	7
3	9	1	8	4	6	5	7	2
6	7	4	3	5	2	9	1	8
8	5	2	7	1	9	3	6	4
1	6	8	2	3	4	7	5	9
5	4	3	9	6	7	2	8	1
7	2	9	5	8	1	4	3	6

2.

5	1	3	2	8	6	4	9	7
4	2	9	1	3	7	5	6	8
6	7	8	9	4	5	3	1	2
9	4	6	5	2	8	7	3	1
1	8	7	4	9	3	2	5	6
3	5	2	6	7	1	9	8	4
7	6	4	3	1	9	8	2	5
2	9	1	8	5	4	6	7	3
8	3	5	7	6	2	1	4	9

3.

2	9	7	5	3	1	6	4	8
5	8	1	7	6	4	2	3	9
4	6	3	9	8	2	7	5	1
3	2	5	4	1	8	9	6	7
1	7	6	2	9	3	4	8	5
8	4	9	6	5	7	3	1	2
9	1	4	3	7	5	8	2	6
6	5	2	8	4	9	1	7	3
7	3	8	1	2	6	5	9	4

4.

9	1	4	2	8	7	5	3	6
7	8	5	1	3	6	9	4	2
2	3	6	9	5	4	8	1	7
4	9	1	8	7	5	6	2	3
8	2	7	6	9	3	4	5	1
6	5	3	4	1	2	7	9	8
5	7	8	3	2	9	1	6	4
3	6	9	7	4	1	2	8	5
1	4	2	5	6	8	3	7	9

5.

6	9	1	3	4	8	5	2	7
8	3	5	6	2	7	9	1	4
7	4	2	5	1	9	8	6	3
4	5	7	8	3	6	1	4	2
2	8	4	7	5	1	6	3	9
1	6	3	2	9	4	7	5	8
5	2	8	9	6	3	4	7	1
3	1	9	4	7	5	2	8	6
4	7	6	1	8	2	3	9	5

6.

4	3	2	1	5	6	8	7	9
9	8	7	3	2	4	1	6	5
5	6	1	7	9	8	4	2	3
7	9	8	2	1	3	5	4	6
3	5	6	8	4	7	9	1	2
1	2	4	9	6	5	7	3	8
8	1	9	4	3	2	6	5	7
2	7	5	6	8	1	3	9	4
6	4	3	5	7	9	2	8	1

Solutions are on page 58

9121	7504	9031	5602	7222	1842	6530	3281	4432	1165	0832
7321	5062	3028	9060	5371	0760	3622	4612	5800	1833	1138
5332	8701	1813	1940	2605	9040	1494	2243	3343	6501	8041
6341	2065	2722	2325	1048	6063	2803	1309	2722	4424	2155
1910	6133	1191	6710	4513	3033	1570	1941	0614	1363	8200
4081	3820	5252	1561	3901	9303	0652	4234	5152	6313	3037
7210	0517	0618	1048	2514	1273	6211	7802	9002	1721	4252
9220	8050	2191	7411	1823	6701	5530	4144	4045	2119	9013
7501	5352	7011	4345	0508	8113	1822	6014	9005	8114	3602
0661	4713	8401	5126	5323	1724	6237	9024	2812	0481	2902
8032	3712	2632	7311	0706	4720	1075	6016	3145	2406	1219

LUCKY 13 MAZE

Work through the maze from the upper-left corner to the lower-right corner by passing through only those boxes whose four enclosed digits add up to 13. You may proceed up, down, left, or right, but not diagonally; and you may not retrace or cross your path. Our speedy-sums whiz added his way through the maze in only 4 minutes and 42 seconds; but any time of less than six minutes qualifies you as a level-13 expert.

Solution is on page 58.

FIGURE LOGIC 2

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Directions for solving Figure Logics are on page 12.
If you need help starting this puzzle, a starting number is given on page 63.

NOTE: A cube of a number is that number multiplied by itself twice. For example, the cube of 2 is 8 (2 x 2 x 2 = 8).

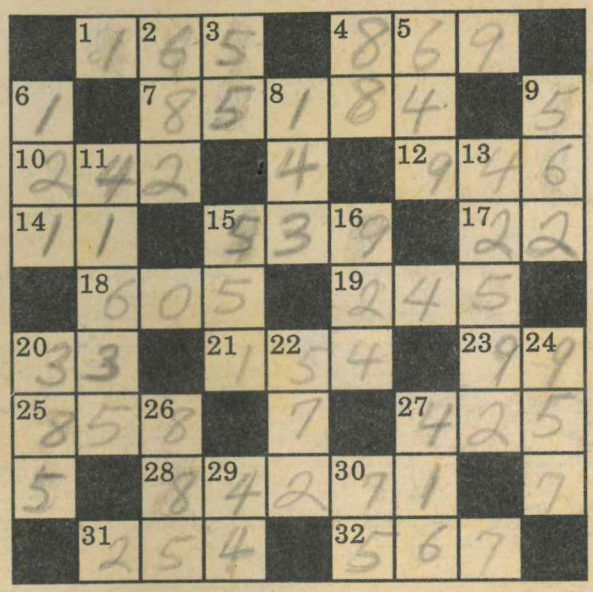
ACROSS

1. Three times 3-Down
4. 12-Across minus 30-Down
7. Cube of 29-Down
10. 14-Across times 17-Across
12. 17-Across plus 16-Down
14. Same digit repeated
15. 16-Down minus 20-Down
17. Twice 14-Across
18. 14-Across times 3-Down
19. Digits of 31-Across rearranged
20. Three times 14-Across
21. 14-Across plus 8-Down
23. Three times 20-Across
25. First and last digits are the same
27. Digits of 19-Across rearranged
28. 7-Across minus the sum of 4-Across and 29-Down
31. One hundred more than 21-Across
32. Consecutive digits

DOWN

2. 20-Across plus 5-Down
3. First digits of 15-Down
4. 23-Across minus 14-Across
5. Digits of 12-Across rearranged
6. Half of 10-Across
8. 17-Across plus 6-Down
9. Ten less than 22-Down
11. 13-Down minus 24-Down
13. Half of 7-Across
15. 9-Down minus 14-Across
16. 24-Down minus 20-Across
20. 10-Across plus 8-Down
22. 15-Across plus 20-Across
24. 12-Across plus 14-Across
26. Digits of 25-Across rearranged
27. 20-Across plus 20-Down
29. Half of 4-Down
30. 17-Across plus 3-Down

Solution is on page 58



MAGIC NUMBER SQUARES

For all of the puzzles below, the magic number is 776. Try to place the numbers allowed by the rule below each diagram into the blank squares so that the numbers in the following add up to 776: 1. each row; 2. each column; 3. both diagonals; 4. the four center squares; 5. the four corner squares; 6. each quarter of the diagram. A number will be used only once per diagram.

Solutions are on page 58.

1.

158	198	166	254
238	182	214	142
246	174	206	150
134	222	190	230

Every eighth number from 134 to 254.

2.

183	203	209	181
197	193	187	199
189	201	195	191
207	179	185	205

Every odd number from 179 to 209.

3.

220	184	200	172
164	208	192	212
176	196	180	224
216	188	204	168

Every fourth number from 164 to 224.

LOGIC PROBLEM

4. SHE WORKS HARD FOR THE MONEY

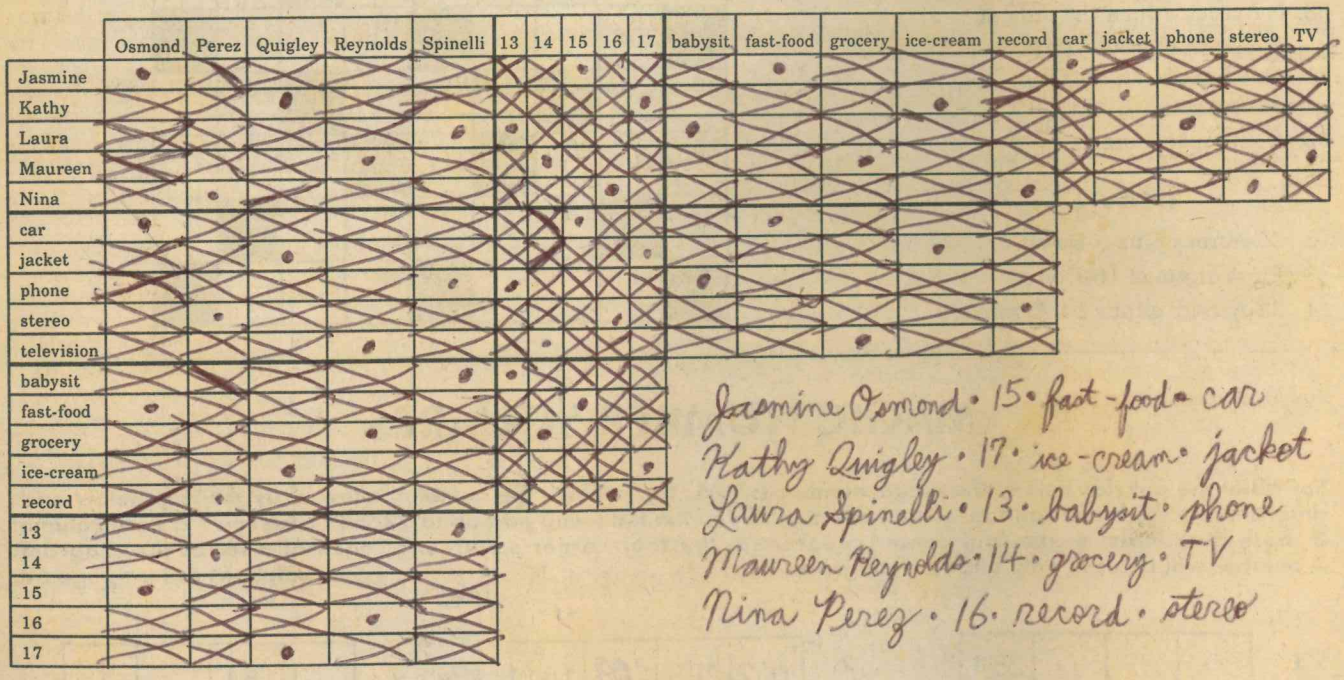
by VARDA REISNER

Being a teenager is expensive. Clothes, movies, makeup, CDs, and so on make it tough to make ends meet on the typical allowance. And it's next to impossible to save up for anything really expensive, like the television one girl has her eye on. She and four of her friends decided the only thing to do was to find after-school jobs; one of the five is now scooping sundaes at the Yum Yum Ice Cream Parlor. Each girl is a different age; they range from 13 to 17. From the following clues, can you figure out each girl's full name and age, the job she took, and the item for which she is saving?

1. The two girls with even-number ages are Nina and the one who works at the grocery store; the three girls with odd-number ages are Kathy (who is not the babysitter), the Osmond girl, and the one who wants her own phone.
2. Jasmine is older than the Perez girl (who is not Maureen) but younger than the one who wants a leather jacket.
3. The girl who is saving to buy a car is older than Maureen, who is older than the Spinelli girl.
4. Laura is two years younger than the girl who works at the Happy Burger fast-food restaurant; the Reynolds girl is younger than the one who is saving for a stereo.
5. The Quigley girl is one year older than the one who works at the record store.

Solution is on page 59.

See page 6 for instructions for using standard charts.



Jasmine Osmond • 15 • fast-food • car
Kathy Quigley • 17 • ice-cream • jacket
Laura Spinelli • 13 • babysit • phone
Maureen Reynolds • 14 • grocery • TV
Nina Perez • 16 • record • stereo

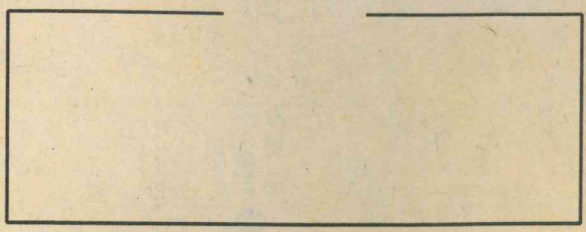
...AND GOING

Paul and Bob are back and on speaking terms again, and neither of them has any plans for the day beyond collecting those pavement-pounding miles. Paul is still walking 3 miles per hour and Bob still jogs at 6 miles per hour. This time they've set off in the same direction. After how many hours will Bob be 36 miles ahead of Paul?

Solution is on page 61

FENCING LESSONS

Spring is almost in the air; and Charles is dreaming of fresh flowers, fruits, and vegetables grown in his very own backyard garden. His dining-room table is covered with seed catalogs and sales circulars from garden and home-canning equipment shops. His dreams are limited only by the size of his yard and the way fencing is packaged (he has to have a fence to keep the neighborhood dogs, cats, and kids from trampling the tulips). He can buy fencing only in 300-foot bundles, and he hasn't the yard space to justify buying more than one bundle. He thinks the garden will look best in a rectangular shape, with the long sides 24 feet longer than the short sides. One of the longer sides will also have a gate, which will be 4 feet wide. (The illustration below, which is not necessarily to scale, shows the intended layout.) Taking these proportions and using all 300 feet in one bundle of fencing, what will the dimensions of his garden be?



Solution is on page 61

BINGO PLAYS 1

In this puzzle, you are trying to fill your "card" with numbers and make a winning Bingo game. Just as in Bingo, each column has limits set for the numbers that can be placed in that column, as shown at the top of the card. For example, in column B, every square will have a number between 1 and 15 inclusive; in column N, every number will be between 31 and 45 inclusive. Use the given clues to eliminate possibilities within those limits until you can enter one final number in each square. A number will appear only once in any column. The "free" space in the center of the card is just that; you need not enter a number in that square. After you have filled in your card, find the Bingo winning combination: Just as in Bingo, the five numbers in one row, column, or diagonal will fit the clues given. Circle these numbers and you have won the game!

Solution is on page 58.

There is another Bingo Plays on page 37.

1. The number one does not appear on the card as a single digit, nor does it appear in column N, G, or O, or square PB, LI, AI, YI, or SB.
2. The number two does not appear on the card as a single digit, nor does it appear in row P, column N, or square LG, AO, SI, or SO.
3. The number three does not appear in row L or S, column I or G, square PO, AB, YB, or YO, or in the winning combination.
4. The number four does not appear in row A or Y, column I, or square PN, LB, LG, SG, or SO.
5. The number five does not appear on the card as a single digit, nor does it appear in row P, column I or O, or square AG, YB, or YN.
6. The number six does not appear in row L, column B, square PI, PG, PO, AI, YG, YO, SI or SG, or in the winning combination.
7. The number seven does not appear in row A, column B or N, or square PG, LI, LG, YI, SG, or SO.
8. The number eight does not appear in row L, A, or S, column B, or square PN, YI, or YG.
9. The number nine does not appear in row P, L, A, or Y, or column B, I, or G.
10. Zero does not appear in row P or Y, or square LN, AB, or AI.
11. The number 22 is the only double-number combination on the card.

	B 1-15	I 16-30	N 31-45	G 46-60	O 61-75	
P	3	18	36	48	74	P
L	10	20	45	50	70	L
A	15	22	FREE	60	63	A
Y	12	26	38	57	72	Y
S	4	17	40	52	69	S
	B	I	N	G	O	

WORD ARITHMETIC

Directions for solving are on page 9.

Solutions are on page 63.

10.

0 1 2 3 4 5 6 7 8 9

```
          B O O T
1489  3 1 4 7 5 9 1
O R E D | T O R N A D O
        B D N E
          O I D A
          O R E D
            B J I D
          O R E D
            A E J O
            R R I N
            O T T R
```

11.

0 1 2 3 4 5 6 7 8 9

```
            L O S E
4851  5 8 6 2 0 2 1
M E A L | A E R O S O L
        M E A L
          L S L L S
            T K S O
              M S E O L
              W E E S E
                O S L W
```

12.

0 1 2 3 4 5 6 7 8 9

```
          E R A
B A K E | C R E A S E
        B A K E
          A P A E S
          E C C U R
            E R L A E
            E A S C A
              C R K
```

13.

0 1 2 3 4 5 6 7 8 9

```
          S I C
2711  4 7 5 2 3 4
K I S S | T I C K E T
        K I S S
          K A T S E
          S N G I I
            S T E H T
            S E C C C
              N A G
```

14.

0 1 2 3 4 5 6 7 8 9

```
            A Y E
E R A | T R I P E
        E R A
          O C A P
          R Y A Y
            R C A E
            I G E E
              R G C
```

15.

0 1 2 3 4 5 6 7 8 9

```
          D E N
7 4 1 | 4 3 0 8 1 2
C O N | O R I E N T
        R C I D
          U I R N
          D S T E
            N I R T
            C O N
              T S N
```

16.

0 1 2 3 4 5 6 7 8 9

```
            T O T
3 2 7 3 | 2 0 1 6 9 3 6
S E A S | E G O I I S T
        O I T S X
          Y S O S
          S E A S
            E G B G T
            O I T S X
              A T X
```

17.

0 1 2 3 4 5 6 7 8 9

```
            S O Y
T Y P O | H I S T O R Y
        H R T T S
          O C S P R
            T Y P O
              P G C Y Y
              P R S G Y
                O C H C
```

18.

0 1 2 3 4 5 6 7 8 9

```
          E L
I S L E | E S T A T E
        I S L E
          B T E E E
          T N E Z L
            B G L I
```

LOGIC PROBLEM

5. HOME IS WHERE THE ART IS

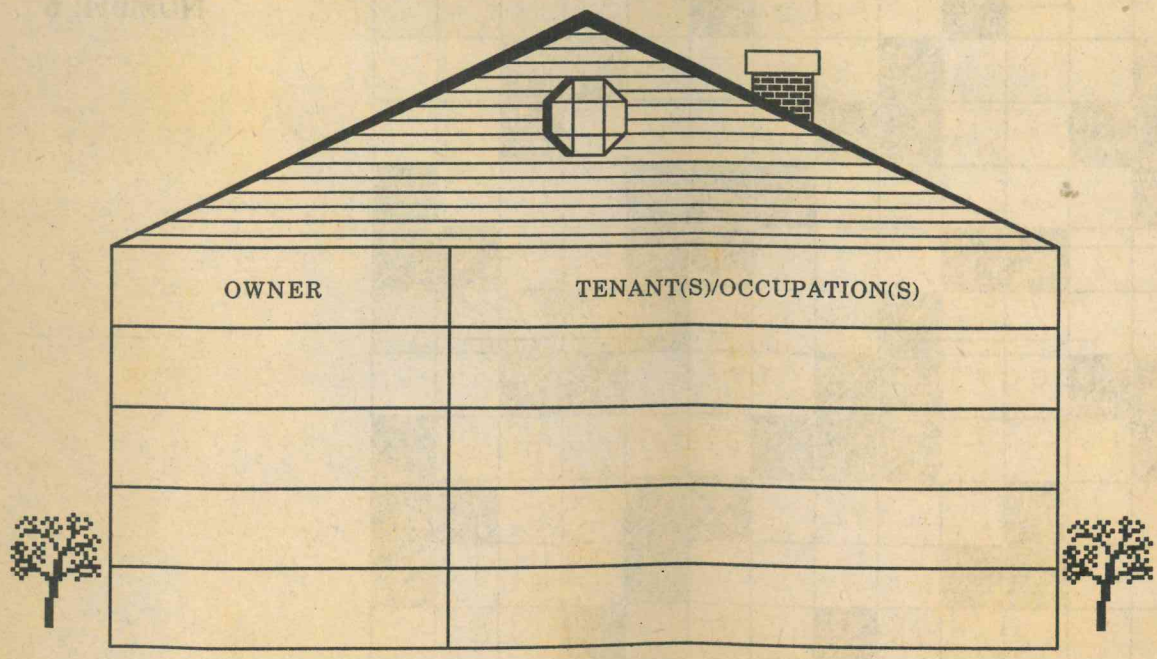
by EVELYN B. ROSENTHAL

Manville College is known for its arts programs, so writers, musicians, and artists often come to spend a year or two as artist-in-residence. Mr. Warner and five others have held the artist-in-residence post over the years. A large house near the college has been owned at one time or another by Ms. Appleton and three other women, some of whom have rented out a wing of the house as a separate apartment; the six artists-in-residence, including Samuel, have rented that apartment for their times at Manville (no two were in residence at the same time). From the following clues, can you find the full names of Winnie and the other three owners, and the full names and creative specialties of each of their tenants?

1. The woman who rented the apartment to Max owned the house after the one who rented it to Mr. Clark and before the one who rented it to the pianist.
2. Artist-in-residence Robert is neither the painter nor the violinist.
3. Gail's tenants, in order, were Mr. Dean (who is not Robert) and the sculptor; those of Ms. Freeman (who is not Louise), in order, were Edward and Mr. Karp.
4. Mr. Harris was a tenant after Mr. Brown; both were writers.
5. The sculptor and the painter were not tenants of the same owner.
6. Don, the poet, was not the first tenant.
7. Phil was a tenant after the novelist.
8. When Louise bought the house from Ms. Morse, the separate apartment had not yet been constructed; when Ms. Perkins, who is not Louise, sold it to Josie, it had.

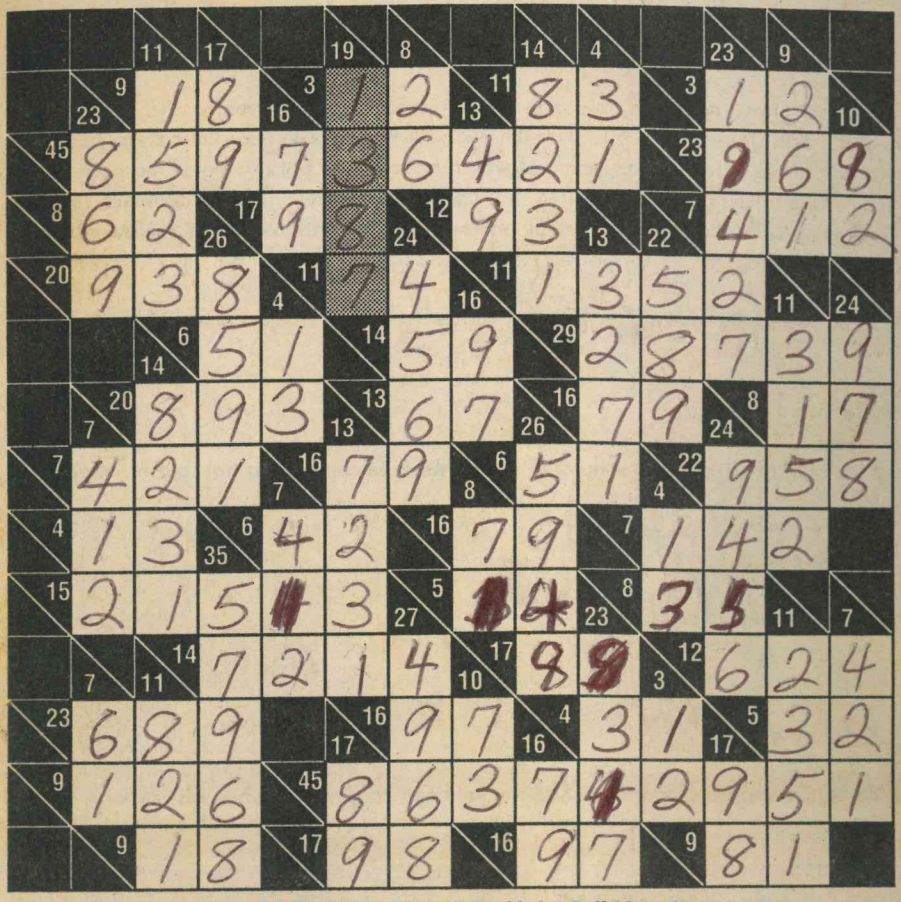
Solution is on page 59.

Enter the name of each owner and the name and profession of each tenant as you determine them.



OWNER	TENANT(S)/OCCUPATION(S)

CROSS SUMS



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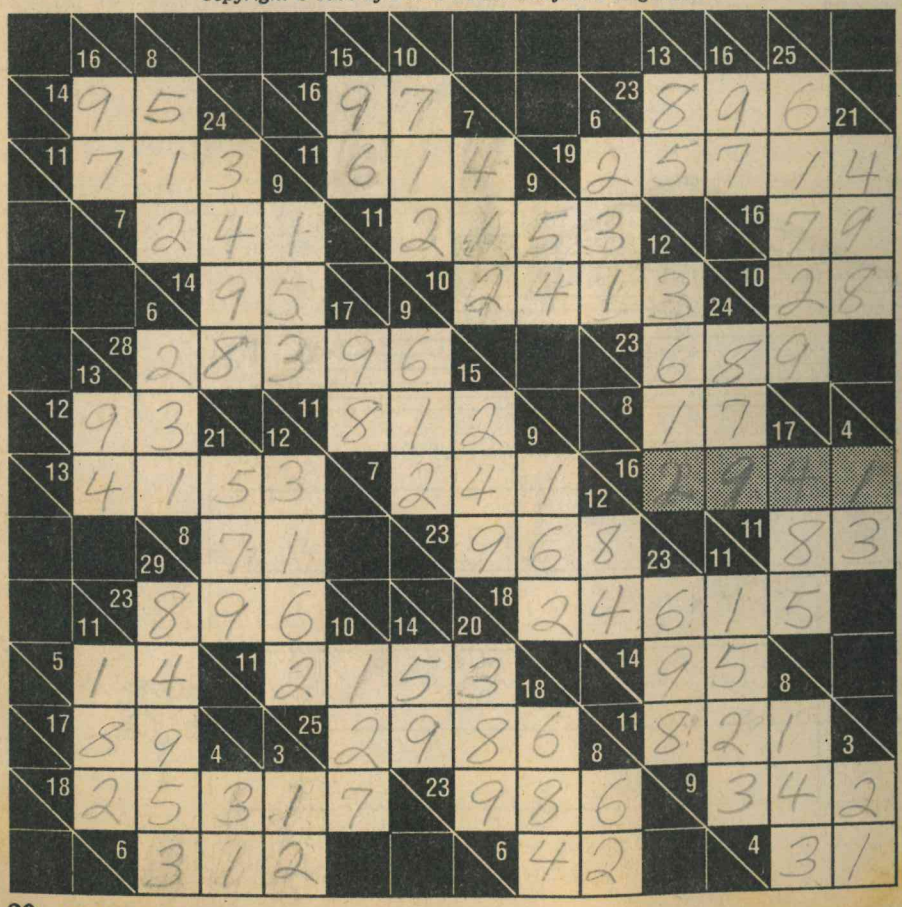
Directions for solving are on page 10. We have shaded one area in each diagram. If you need help starting a puzzle, the digit combination to go into its area is listed on page 63.

NUMBER 5

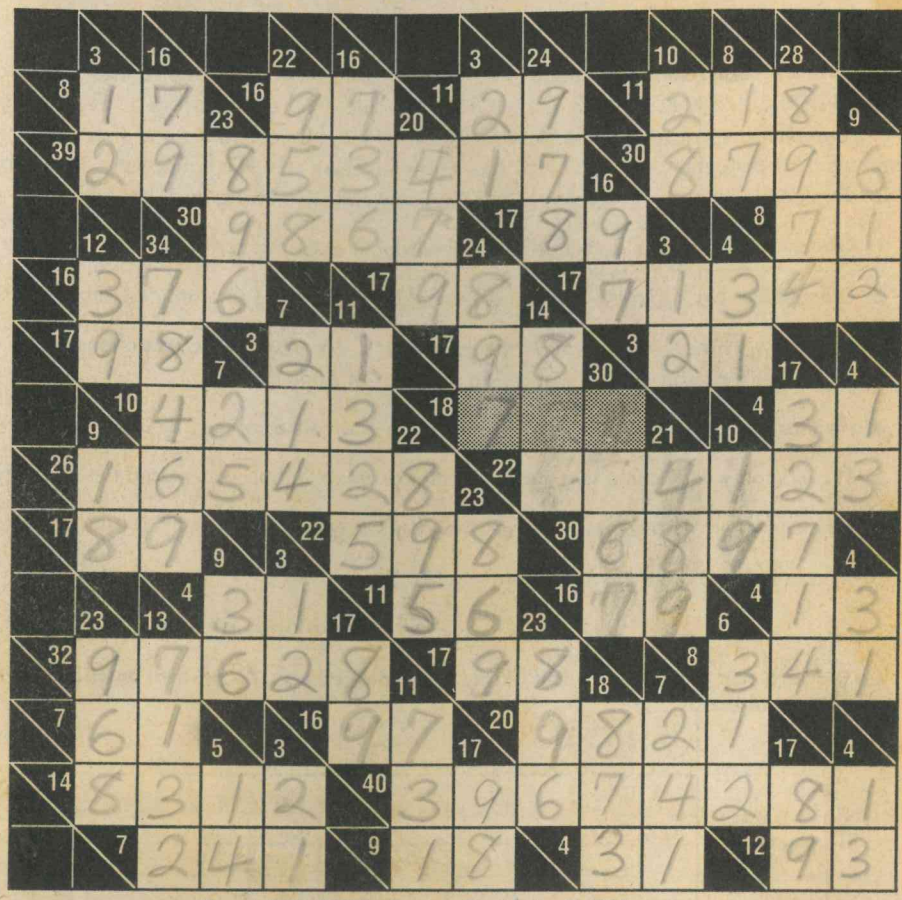
Solutions are on page 56.



NUMBER 6

CROSS SUMS

NUMBER 7



Solutions are on page 56.

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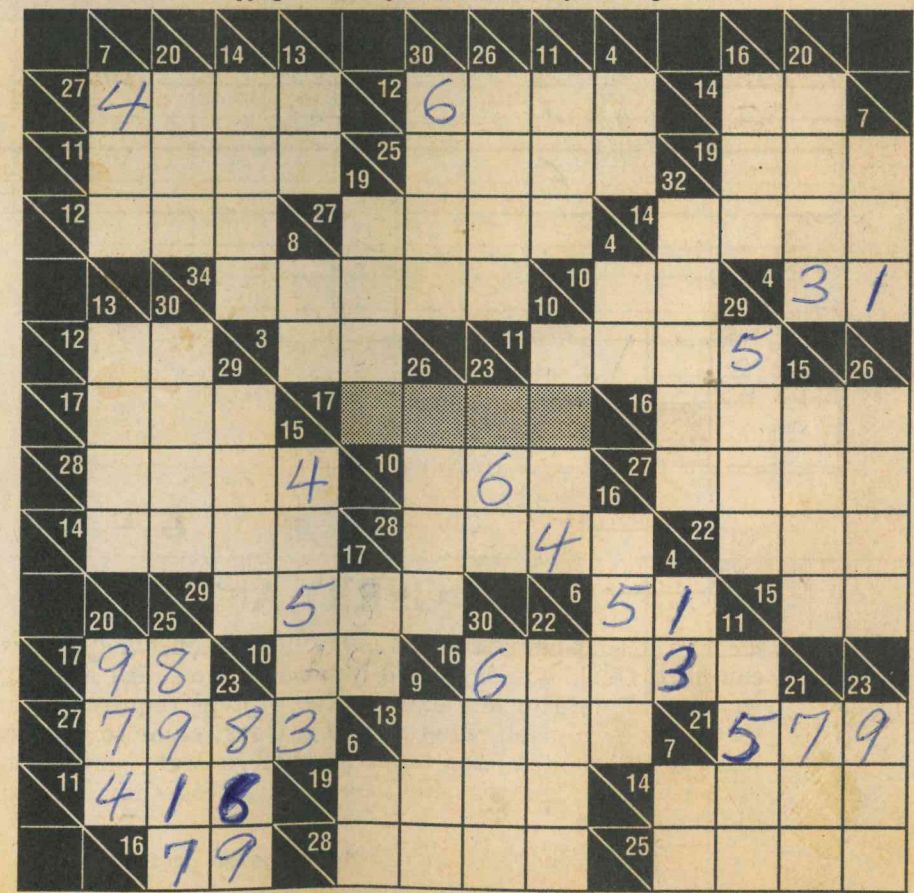
NUMBER 8



There's lots for **Math and Logic** fans to love in the
Dell Pencil Puzzles & Word Games Yearbook
In the Summer 1993 issue, you'll find:
Jigsaw Logic • Crossmath
Sentence Teaser
Mathematical Deduction
Letter Count • Four by Four
Movie Number Quiz
plus
Logic Problems, Cross Sums, Word Arithmetic, and word games, quizzes, and brain teasers galore.
The Summer issue goes on sale **February 16.**
$2.25 in the U.S.; $2.50 in Canada

LOGIC PROBLEM

6. WIGGING OUT

by MARY A. POWELL

Five friends were strolling through the mall last Saturday when one of them spotted the sign in the window at Wigs World: WIGSTOCK CLEARANCE — BIG SALE TODAY. "Wouldn't it be funny if we all bought wigs and wore them home?" Gretchen giggled. A minute later the five were in the store trying on all the different colors and styles of wigs, and each of the five did indeed buy a wig and wear it home; one bought a black wig. From the clues, can you figure out each wig buyer's full name, natural hair color (one has blonde, one black, and one red hair), and the color and style of wig each bought?

1. Gretchen and the one who chose the red wig both opted for curly wigs; the other three chose straight.
2. Diane's wig, Ms. Gold's wig, and (of course) the blonde wig are long; the other two are short.
3. Elaine, who had always admired the color of Ms. Green's hair, bought a long, curly wig that color; Ms. Green, who claims not to like her own hair color, chose a wig the color of Anna's hair.
4. Neither Wanda nor Ms. Silver has brown hair, and neither of them bought a brown wig.
5. The woman who chose a wig the same color as her own hair was teased by Ms. Gray for being unadventurous.
6. One brown wig is curly; the other is straight. One brown wig is short; the other is long.
7. Anna's wig has nothing in common with Ms. White's wig.

Solution is on page 59.

See page 6 for instructions for using standard charts. Note that in this chart some rows and columns will contain more than one dot.

		Gold	Gray	Green	Silver	White	hair color: black	hair color: blonde	hair color: brown	hair color: red	wig color: black	wig color: blonde	wig color: brown	wig color: red	straight	curly	long	short
	Anna			X		X												X
	Diane	X										X					•	X
	Elaine			X											X		•	X
	Gretchen								X				X		X			
	Wanda				X				X				X					
	long	•						•				•						
	short	X						X				X						
	straight												X	X				
	curly												•	•				
wig color	black																	
wig color	blonde																	
wig color	brown				X				X									
wig color	red																	
hair color	black																	
hair color	blonde																	
hair color	brown				X													
hair color	red																	

GERRY AND JERRY

Geraldine and her assistant Jerry have been hired as painters at an industrial complex. Geraldine is an old hand and can paint a utility building in 7 hours, working alone. Her less-experienced protégé requires 14 hours to paint the same structure by himself. This morning, Gerry came to work early and got an hour's work done on one of the buildings before Jerry showed up; when he arrived he joined her and they finished the building together. How long after Jerry arrived did they finish?

Solution is on page 62

FIGURE LOGICS 3 & 4

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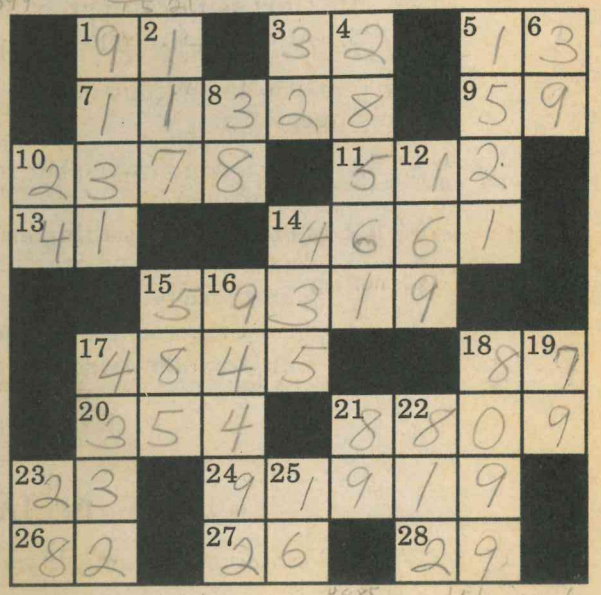
Directions for solving Figure Logics are on page 12.
If you need help starting these puzzles, starting numbers are given on page 63.

ACROSS

1. Seven times 5-Across
3. 1-Across minus 9-Across
5. Ten less than 23-Across
7. 3-Across times 20-Across
9. First two digits of 15-Across
10. 26-Across times 28-Across
11. 3-Across times 25-Down
13. 5-Across plus 23-Down
14. 9-Across times 19-Down
15. 5-Down times 6-Down
17. 14-Across plus eight times 23-Across
18. 3-Down plus 6-Down plus 25-Down
20. Six times 9-Across
21. 23-Across times the sum of 20-Across and 28-Across
23. 6-Down minus 25-Down
24. The sum of its digits is twenty-nine
26. Twice 13-Across
27. 6-Down minus 5-Across
28. One third of 18-Across

DOWN

1. 23-Across times the difference between 14-Down and 8-Down
2. 5-Down divided by 5-Across
3. Digits of 23-Across reversed
4. Square of 12-Down
5. Square of 6-Down
6. Three times 5-Across
8. One less than 6-Down
10. One more than 23-Across
12. Square of 5-Across
14. Five times 18-Across
15. Five times 2-Down
16. 21-Across plus three times 4-Down
17. Three times the square of 8-Down
18. 1-Across times 21-Down
19. 9-Across plus 9-Across minus 6-Down
21. Ten more than 19-Down
22. 28-Across times 23-Down
23. 18-Across minus 9-Across
25. Half of 3-Across

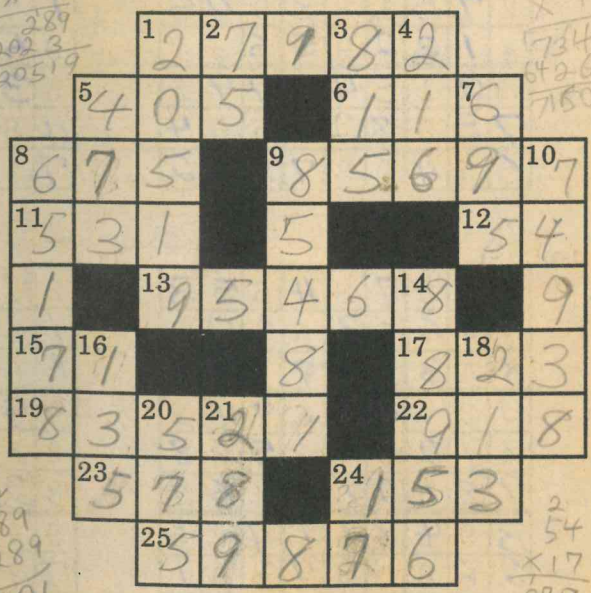


ACROSS

1. Twice 17-Across times 24-Down
5. Three times 16-Down
6. One hundred less than 4-Down
8. Five times 16-Down
9. 1-Down plus 8-Down
11. Digits of 16-Down reversed
12. One-fourth of 4-Down
13. 6-Across times 17-Across
15. 12-Across plus 24-Down
17. Eight more than 3-Down
19. Square of 21-Down
22. 12-Across times 24-Down
23. Twice 21-Down
24. Nine times 24-Down
25. Digits of 9-Across rearranged

DOWN

1. 15-Across times 21-Down
2. Four more than 15-Across
3. Five more than twice 5-Across
4. Three more than 18-Down
5. Middle digit equals sum of other two
7. Twenty more than 8-Across
8. 15-Across times 22-Across
9. 9-Across minus 4-Down
10. Eleven less than 13-Across minus 1-Down
14. Sum of the digits is thirty-six
16. Digits of 24-Across rearranged
18. Three times 15-Across
20. One hundred less than 8-Across
21. Square of 24-Down
24. Digits of 15-Across reversed



Solutions are on page 58

SENTENCE TEASER

Welcome to Technotreally Labs, where we assemble robots and other technopapas. They are built of only the finest grobbins, solowizzes, and so on; and do not only windows but lots of other neat stuff as well. The following five rules give an introduction to robosembly. Pay attention, since there will be a test afterwards.

A. All macroclimaxes feature self-driven grobbins.
B. Solowizzes will not function in products containing self-driven grobbins.
C. All grobbins (self-driven or not) have auto-thinkers built in.
D. Only self-driven grobbins can be used in robots.
E. All window-washer robots are equipped with solowizzes.

Now that you know that much, you should have no trouble answering the following questions:

1. Can a window-washer robot contain a grobbin that is not self-driven?
2. Is there such a thing as a robot fitted with a solowizz that has a self-driven grobbin?
3. Can there be any robots without auto-thinkers?
4. Can a macroclimax come without an auto-thinker?
5. Can a window-washer robot have a macroclimax?

But not in 1994! Ha-ha!

Answers are on page 62

NUMBER PLACE

Solving instructions and Number Places 1-6 are on page 14.

7.

9	8	5	3	1	2	4	7	6
1	6	7	4	5	8	2	3	9
3	4	2	6	7	9	1	5	8
5	9	8	7	6	4	3	2	1
2	7	6	1	8	3	9	4	5
4	1	3	2	9	5	6	8	7
8	2	1	5	4	6	7	9	3
7	3	9	8	2	1	5	6	4
6	5	4	9	3	7	8	1	2

8.

8	9	5	7	6	2	1	4	3
6	2	7	4	1	3	9	8	5
3	4	1	9	5	8	6	2	7
2	6	3	8	4	1	5	7	9
1	7	4	3	9	5	8	6	2
9	5	8	2	7	6	4	3	1
5	3	6	1	8	7	2	9	4
4	8	2	5	3	9	7	1	6
7	1	9	6	2	4	3	5	8

9.

9	8	2	5	7	1			6
5			8	6	4	9		
	4	6	9	3	2		7	1
		4	2	1		6		8
2				9	8		4	
	9	8		4		1		
	2			8		7	6	
6	5		4	2	7			3
		3	6	5	9		1	

10.

1	2	9	7	8	4	6	5	3
7	4	6	1	3	5	2	8	9
8	5	3	6	2	9	1	7	4
6	3	7	4	5	8	9	1	2
4	1	2	9	7	6	5	3	8
9	8	5	2	1	3	4	6	7
3	9	4	8	6	1	7	2	5
2	6	8	5	4	7	3	9	1
5	7	1	3	9	2	8	4	6

Tonyh chic, Gail!

11.

2	7	4	1	5	9	3	6	8
1	3	9	7	8	6	5	4	2
6	8	5	3	2	4	1	7	9
4	9	6	5	3	2	7	8	1
8	5	1	4	6	7	9	2	3
3	2	7	8	9	1	6	5	4
9	1	2	6	7	8	4	3	5
7	4	3	2	1	5	8	9	6
5	6	8	9	4	3	2	1	7

12.

6	3	9	7	2	5	1	4	8
7	8	4	1			5	2	3
1	2	5	4	3	8	6	9	7
4	7		5			2		9
5	9			4	1	7	3	6
2	6	1	9	7	3	5	8	4
3	1		8	5		4	6	2
9	5			1		9	7	
8		7			2	3		1

Solutions are on page 58

Adam Reynolds

LOGIC PROBLEM

7. 'ROUND AND 'ROUND THEY GO

by SUSAN ZIVICH

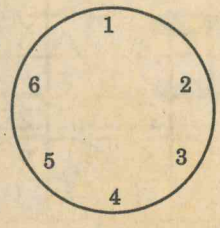
The Martin twins celebrated their birthday by having a party with some of their friends in Carousel Park. Mrs. Martin had baked birthday cupcakes, and gave each child a balloon (one was pink), then all six children went for a spin on the carousel, which has six different animal seats. From the clues, can you give each child's full name, the animal each rode on the carousel, the color balloon each received, and their order on the carousel?

1. No child rode right behind his or her own sibling.
2. Elizabeth rode right behind the tiger and just ahead of the child with the purple balloon.
3. One of the Shapiro boys sat just behind Ryan, who was in seat 1, and just ahead of the dragon.
4. The child on the swan held an orange balloon.
5. Sharon was just behind the child on the lion.
6. Patsy was just behind Ryan's sister and just ahead of the boy with the green balloon.
7. A blue balloon was tied to Andrew's wrist.
8. Jason was just ahead of the girl who rode the galloping horse.
9. One of the Delgado girls was on the giraffe; the other did not have the yellow balloon.

Solution is on page 59.

See page 6 for instructions for using standard charts. Note that in this chart some rows and columns will contain more than one dot; and keep in mind that, since the carousel is a circle, the child in seat 6 is ahead of the child in seat 1. In addition to the chart, we've included a small illustration of the carousel to assist you in visualizing this.

	Delgado	Martin	Shapiro	dragon	giraffe	horse	lion	swan	tiger	blue	green	orange	pink	purple	yellow	1	2	3	4	5	6
Andrew			•							•											
Elizabeth																					
Jason			•																		
Patsy																					
Ryan																•					
Sharon																					
1			•																		
2																					
3																					
4																					
5																					
6																					
blue			•																		
green																					
orange								•													
pink																					
purple																					
yellow																					
dragon																					
giraffe																					
horse																					
lion																					
swan																					
tiger																					



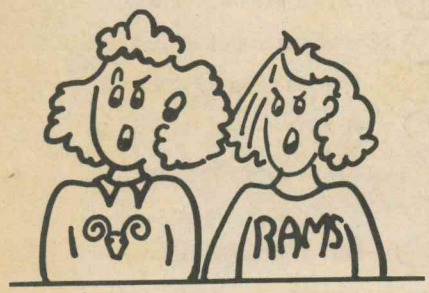
WATCH 'EM SCORE

When Dizzy waited tables
At the sports bar Watch 'Em Score,
He mixed up every order made
By tables one through four.

Of three Bears fans at one table
(Who didn't include Jake),
Two asked for fries and burgers while
The woman ordered steak.

Two women sat at one table
And rooted for the Rams.
One got the chicken meant for Beth,
The other ordered clams.

A married pair took table three.
One got the order meant for Lynn.
Dan sat alone at table one;
He got the order meant for Gwen.



Each table cheered for just one team,
And more fans liked the Rams.
Stan didn't sit at table four.
Bernardo got the clams.

If three people were served roast beef,
And none of them was Dot,
Tell each one's name, table, and team,
What each ordered and what each got.

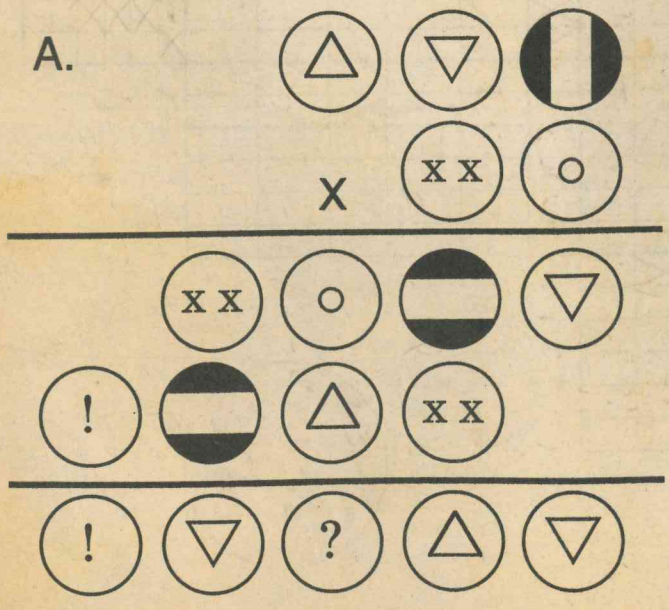
Solution is on page 62

TWO-PART MATH

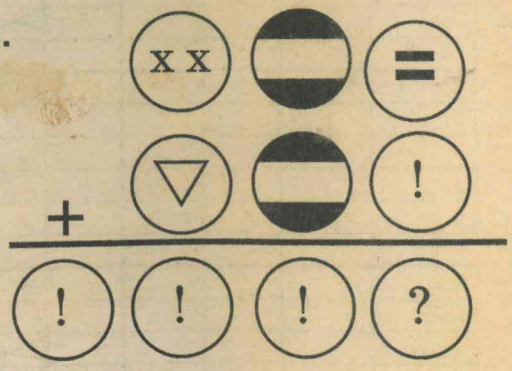
Each of the symbols in the two arithmetic problems below stands for one of the numbers 0 through 9, but no two symbols stand for the same number. Each symbol does stand for the same number through both problems, however; so if you were to place a "3" in the upper left circle in Problem B, you would also place a "3" in any other circle containing XX. By working back and forth from one problem to the other, can you deduce the number represented by each symbol?

Solution is on page 63.

A.



B.



A. 483
×26
2658
1542
18078

B. 259
+851
1110

FIGURE LOGIC 5

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Directions for solving Figure Logics are on page 12.
If you need help starting this puzzle, a starting digit is given on page 63.

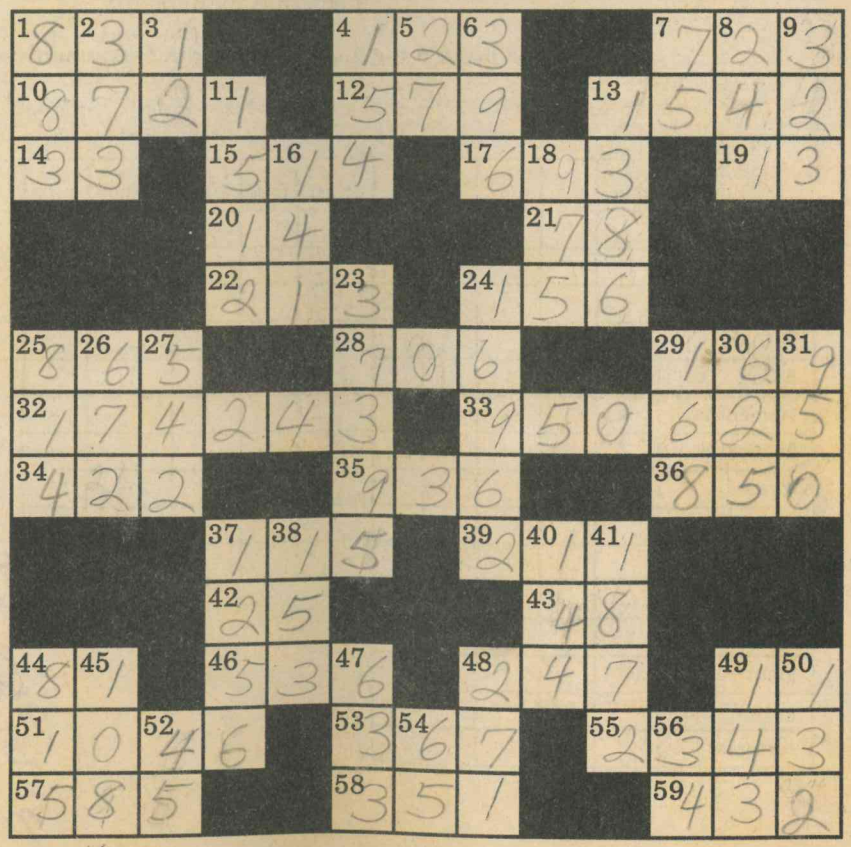
ACROSS

1. 18-Down minus 40-Down
4. 24-Across minus 14-Across
7. 12-Across plus 40-Down
10. 9-Down times 5-Down
12. Digits of 18-Down reversed
13. 13-Down plus 24-Across
14. 6-Down divided by 3-Down
15. 2-Down plus 16-Down
17. 28-Across minus 19-Across
19. One more than 3-Down
20. 42-Across minus 49-Across
21. 14-Across plus 52-Down
22. 55-Across divided by 49-Across
24. 3-Down times 19-Across
25. 58-Across plus 15-Across
28. 36-Across minus 40-Down
29. Square of 19-Across
32. 8-Down times 7-Across
33. Square of 18-Down
34. Twice 39-Across
35. 21-Across times 3-Down
36. 56-Down times 42-Across
37. 48-Across minus 50-Down
39. Two less than 22-Across
42. 3-Down plus 19-Across
43. 20-Across plus 56-Down
44. First two digits of 25-Down
46. 22-Across plus 9-Down
48. 21-Across plus 29-Across
49. One-third of 14-Across
51. 7-Across plus 9-Down
53. 22-Across plus 4-Down
55. 11-Down plus 1-Across
57. Three-fifths of 18-Down
58. 5-Down times 19-Across
59. Four times 45-Down

DOWN

1. 36-Across plus 14-Across
2. Six more than 53-Across
3. One-fourth of 43-Across
4. 20-Across times 49-Across
5. 7-Down minus 43-Across
6. 18-Down minus 12-Across
7. 24-Across minus 44-Across
8. One-third of 7-Across
9. Palindromic number
11. 20-Across times 45-Down
13. Twice 17-Across
16. 45-Down plus 14-Across
18. 7-Down times 19-Across
23. 1-Across times 52-Down
24. 49-Across times 13-Across
25. 28-Across plus 45-Down
26. 28-Across minus 56-Down
27. 25-Across minus 9-Down
29. 24-Across plus 3-Down
30. Last three digits of 33-Across
31. First three digits of 33-Across
37. 1-Down plus 2-Down
38. 16-Down plus 3-Down
40. Square of 3-Down
41. 19-Across times 40-Down
44. 26-Down plus 49-Down
45. Three-fourths of 40-Down
47. 34-Across plus 39-Across
48. 17-Across minus 34-Across
49. 50-Down plus 49-Across
50. 3-Down times 49-Across
52. 56-Down plus 49-Across
54. 21-Across minus 19-Across
56. One more than 14-Across

Solution is on page 58



LOGIC PROBLEM

8. THIS IS MY QUEST

by MARY MARKS CEZUS

Once upon a time, there was a kingdom ruled by a rather greedy but lazy king named Mineness. If he heard a legend about a jeweled sword or a magic potion, he just HAD to have it, so he'd send one of his subjects on a quest to get it. Quests, as you know, are no picnic — they usually involve fighting dragons or charting paths through enchanted forests. However, the punishment for quitting a quest and returning without the goods was banishment to the kingdom ruled by Mineness' nasty brother Meanness, where people slave all day cutting the grass with broken scissors and eat nothing but wilted spinach. So questers would spend months and years hunting down whatever it was they were supposed to find — five such questers took 16 months, 28 months, 3 years, 4 years, and 5-1/2 years to find their prizes (granted, the one who took the longest likes the enchanted forest, and has a REALLY bad sense of direction). From the following clues, can you name the object sought by each quester, the magical being who finally took pity on each and told him or her where to go, and the length of each quest?

1. The one who sought the ancient scroll (who was not Delilah) was not helped by the gnome.
2. Clyde's quest was completed in a shorter time than the quest of the one who was aided by the dwarf (who did not seek the silver chariot).
3. The quest for the golden quiver took longer than the quest of the person who was helped by the gentle giant (who did not seek the jeweled sword).
4. Neither Ariel nor Delilah went in search of the magic potion.
5. Bjorn's helper was neither the dwarf nor the sorceress.
6. The golden quiver (which was not found with the help of the gnome) was sought by neither Delilah nor Ezra.
7. The fortune teller did not help Ariel (whose quest took less time than the quest for the ancient scroll) nor Bjorn; the fortune teller didn't help the one who made the longest quest, either.
8. Ezra took less questing time than the one who was helped by the gnome (who did not make the longest quest).
9. The longest quest was not for the jeweled sword.

Solution is on page 60.

See page 6 for instructions for using standard charts.

	char.	pot.	quiv.	scr.	sw.	dwarf	fort.	giant	gnome	sorc.	16mo.	28mo.	3yr.	4yr.	5-1/2yr.
Ariel															
Bjorn															
Clyde															
Delilah															
Ezra															
16 months															
28 months															
3 years															
4 years															
5-1/2 years															
dwarf															
fortune teller															
giant															
gnome															
sorceress															

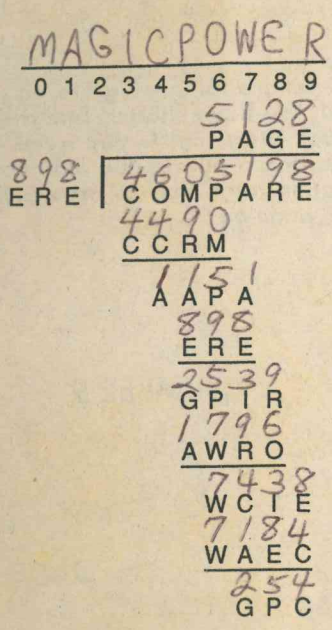
Westwood Ho!
Tina Brinkman (6)
Jenny Ester (7)
Karen Marrow (8)
Dee Fischer (9)
Natalie (10)
Danna Lister (11)
Amy Thorne (12)
Megan Fenton (13)
Debbi Bryan (14)
Carol Ulrich (15)

WORD ARITHMETIC

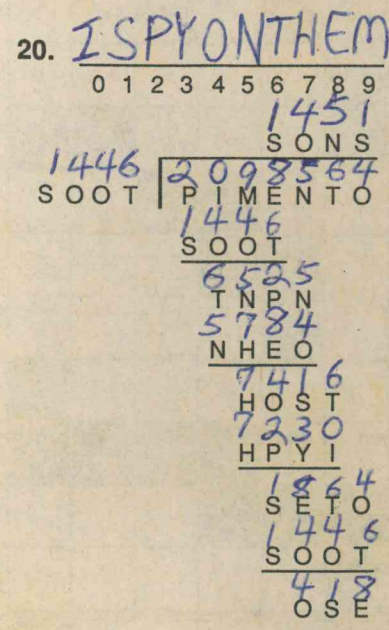
Directions for solving are on page 9.

Solutions are on page 63.

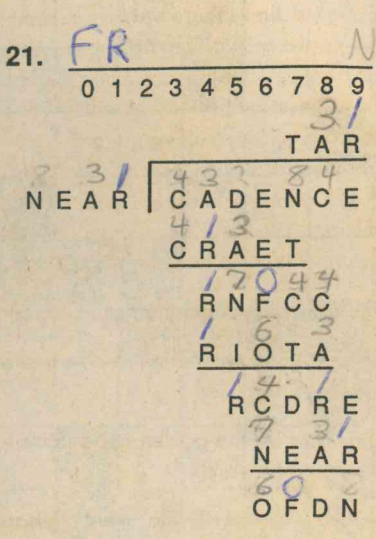
19.



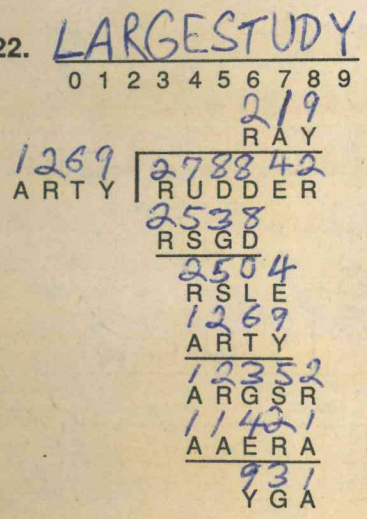
20.



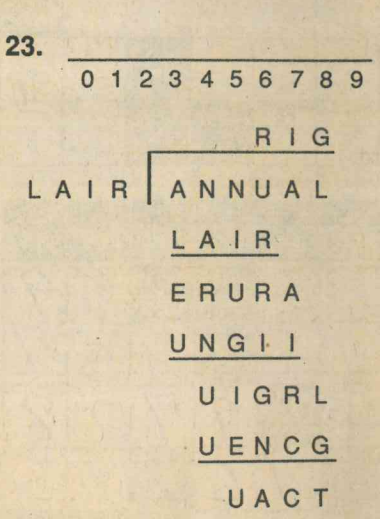
21.



22.

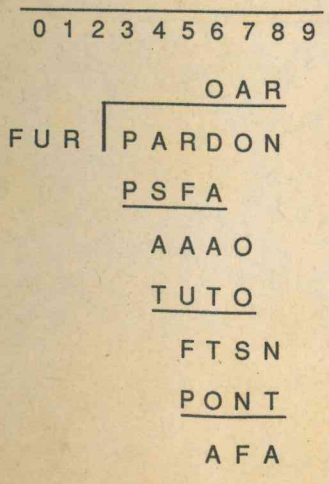


23.

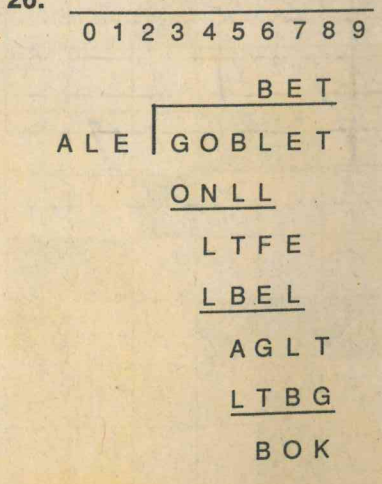


24.

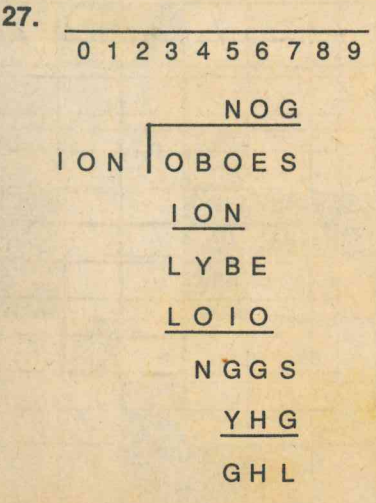
25.



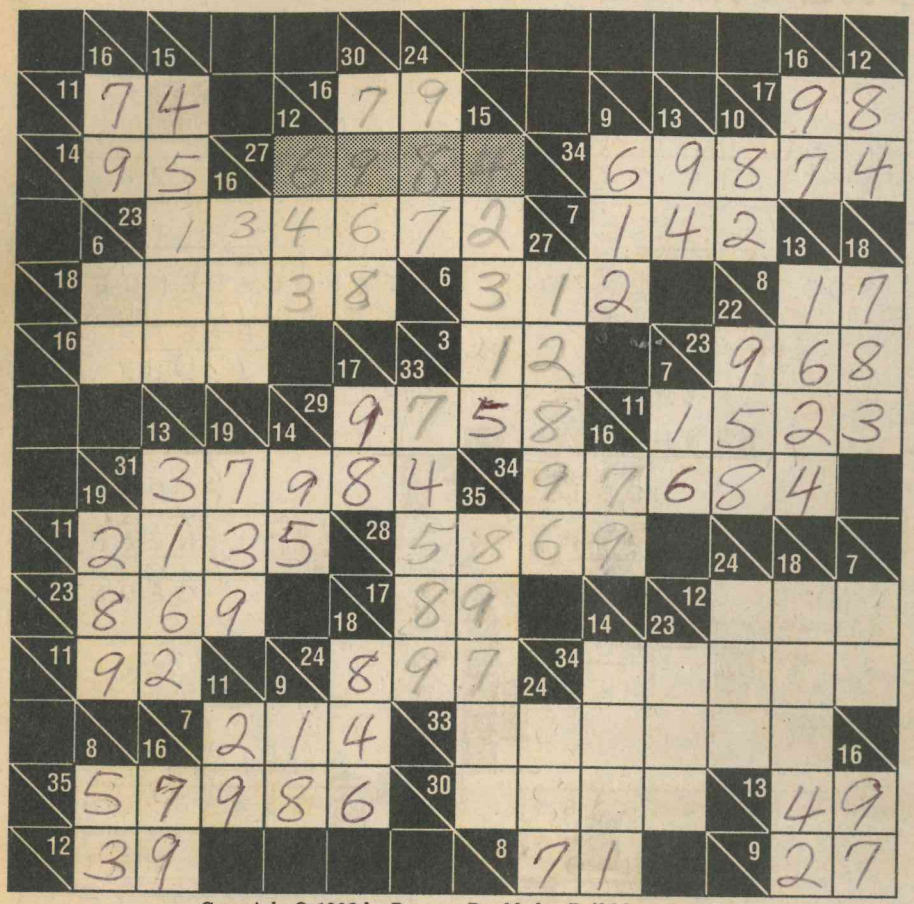
26.



27.



CROSS SUMS



Directions for solving are on page 10. We have shaded one area in each diagram. If you need help starting a puzzle, the digit combination to go into its area is listed on page 63.

NUMBER 9

714 813
732 831
912

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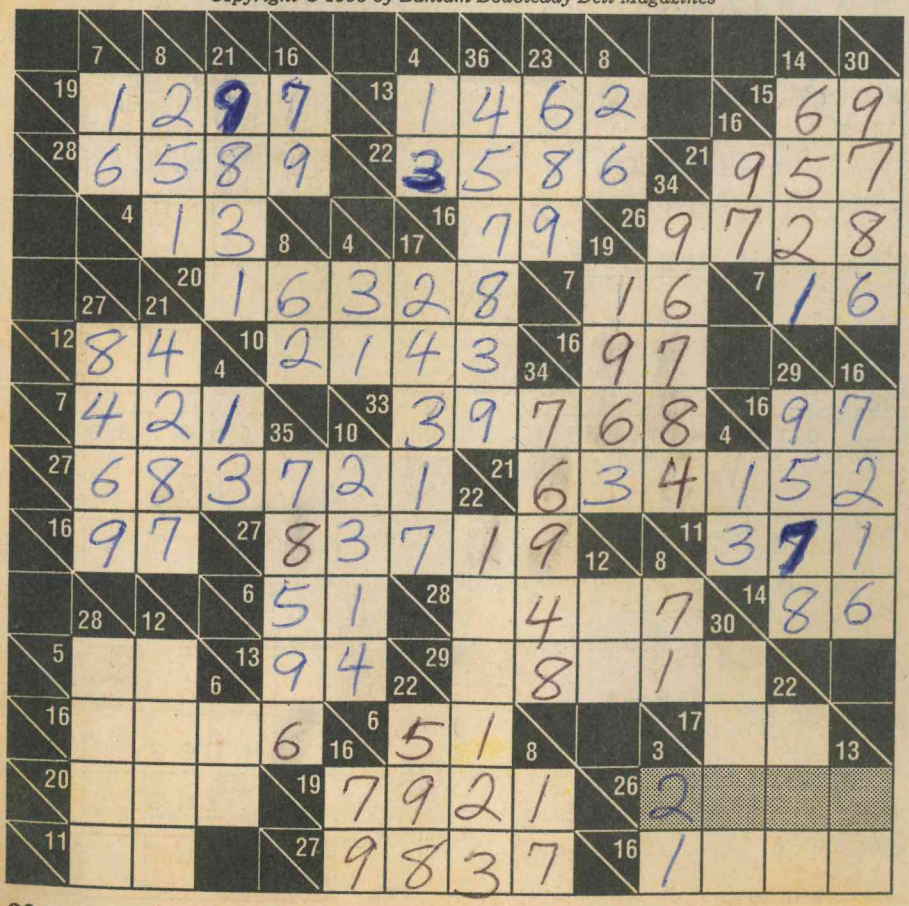
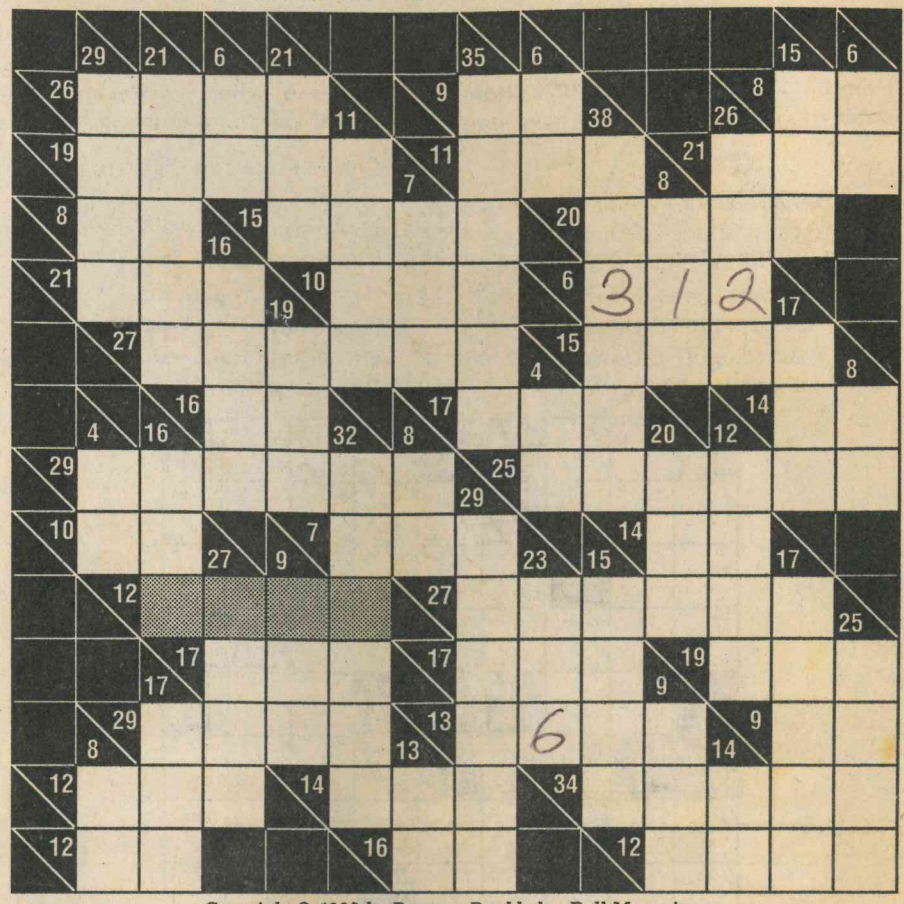
Solutions are on page 56.



NUMBER 10

CROSS SUMS

NUMBER 11



Solutions are on page 57.

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NUMBER 12

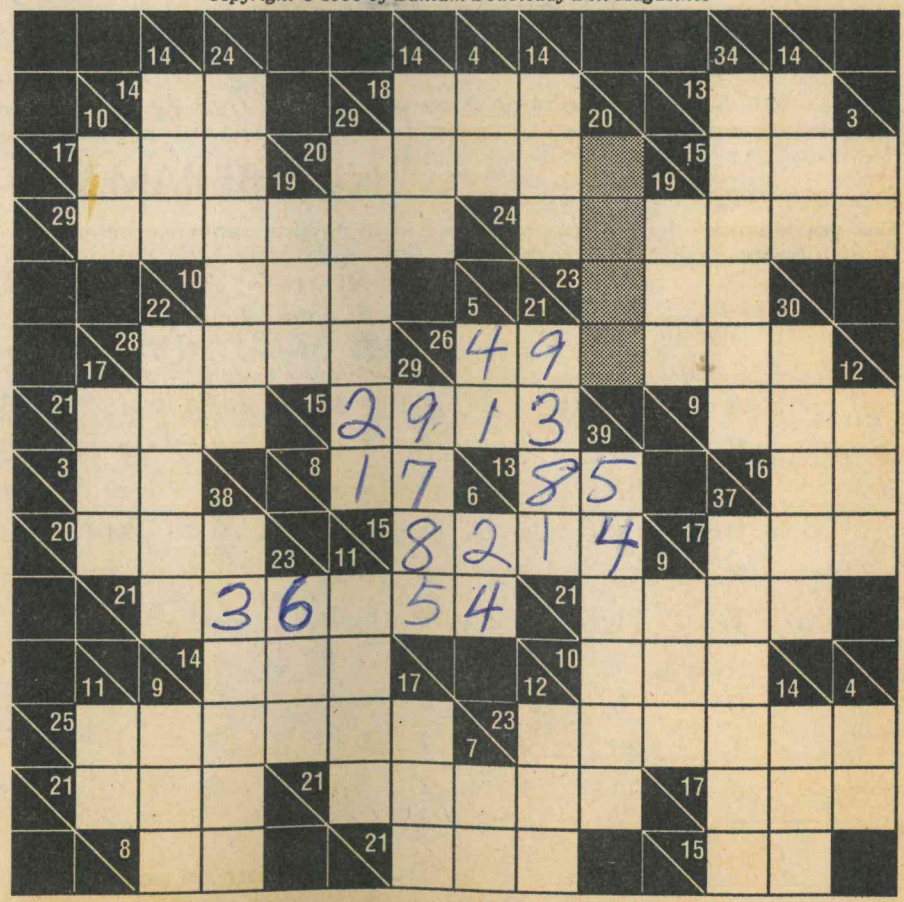

FIGURE LOGIC 6

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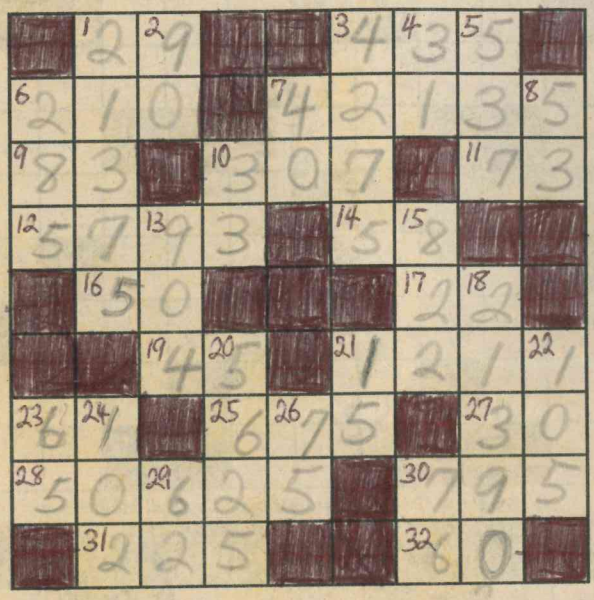
Directions for solving Figure Logics are on page 12. This puzzle is a diagramless — you will have to enter the black squares as well as the numbers into the diagram as you solve. Remember that the diagram is symmetrical from the top-left corner to the bottom-right corner so, when you decide the location of one black square, you can enter its counterpart. If you need help starting this puzzle, a starting help is given on page 63.

ACROSS

1. One less than 27-Across
3. 1-Across times 21-Down
6. Digits of 24-Down rearranged
7. 30-Across times 8-Down
9. 27-Across plus 8-Down
10. 17-Across plus 6-Down
11. 7-Down plus 10-Down
12. Consecutive odd digits in some order
14. 11-Across minus 21-Down
16. 2-Down minus 7-Down
17. Same digit repeated
19. Consecutive digits in some order
21. 10-Across plus 13-Down
23. One more than 32-Across
25. 19-Across times 21-Down
27. Twice 21-Down
28. Square of 31-Across
30. 8-Down times 21-Down
31. Square of 21-Down
32. 1-Across plus 4-Down



Solution is on page 58

DOWN

1. Five times 3-Down
2. 21-Down plus 26-Down
3. 6-Down times 21-Down
4. One more than 27-Across
5. 3-Across plus 24-Down
6. 6-Across plus 26-Down
7. Ten more than 27-Across
8. 26-Down minus 17-Across
10. Same digit repeated
13. Four more than ten times 2-Down
15. 5-Down plus 6-Down
18. 1-Down plus 21-Down
20. Square of 26-Down
21. One third of 19-Across
22. Half of 6-Across
23. 16-Across plus 21-Down
24. 1-Across plus 11-Across
26. 19-Across plus 27-Across
29. Twice 4-Down
30. Consecutive digits in some order

NUMBERAMA

Can you discover the logical pattern for each number sequence below and thereby discover the missing number (shown by the dash)? For example, for

26 16 20 11 ___ 7 11 4 8

the solution is:

26(-10)=16(+4)=20(-9)=11(+4)=15(-8)=7(+4)=11(-7)=4(+4)=8.

A.	18	34	26	42	—	48	36	52	38	
B.	23	13	3	14	—	13	1	14	27	
C.	41	64	32	54	—	48	24	44	22	
D.	4	16	48	12	—	24	72	18	9	
E.	12	2	4	12	—	6	18	9	18	54
F.	11	8	24	28	—	4	12	16	4	
G.	3	24	16	8	—	40	30	20	5	
H.	1	24	6	2	—	8	5	26	13	11
I.	28	4	11	33	—	5	13	52	60	
J.	30	1	2	32	—	8	33	2	12	32
K.	24	48	12	6	—	28	7	1	9	

Answers are on page 63

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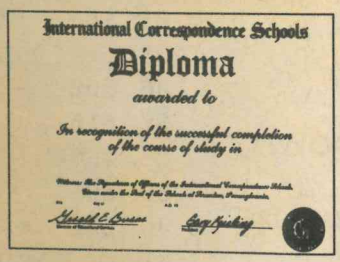
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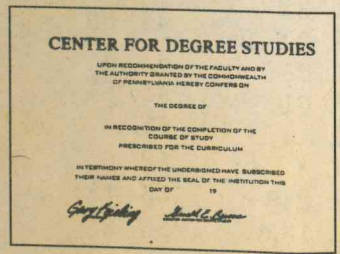
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- ☐ Police Sciences
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- ☐ TV/VCR Repair
- ☐ Child Day Care
- ☐ Legal Assistant
- ☐ Photography
- ☐ Journalism/Short Story Writing
- ☐ Florist
- ☐ Teacher Aide
- ☐ Medical Transcriptionist
- ☐ Real Estate Appraiser

NAME_____ AGE_____

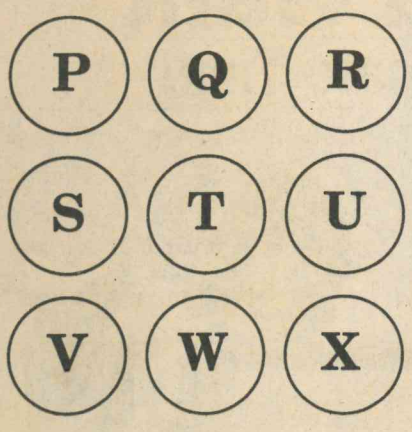
ADDRESS_____ APT. #_____

CITY/STATE_____ ZIP_____

PHONE ( )_____

CRYPTIC MATH

Each of the nine letters stands for one of the numbers one through nine, but no two letters stand for the same number. Using the clues, can you deduce the number represented by each letter? **Solution is on page 62.**

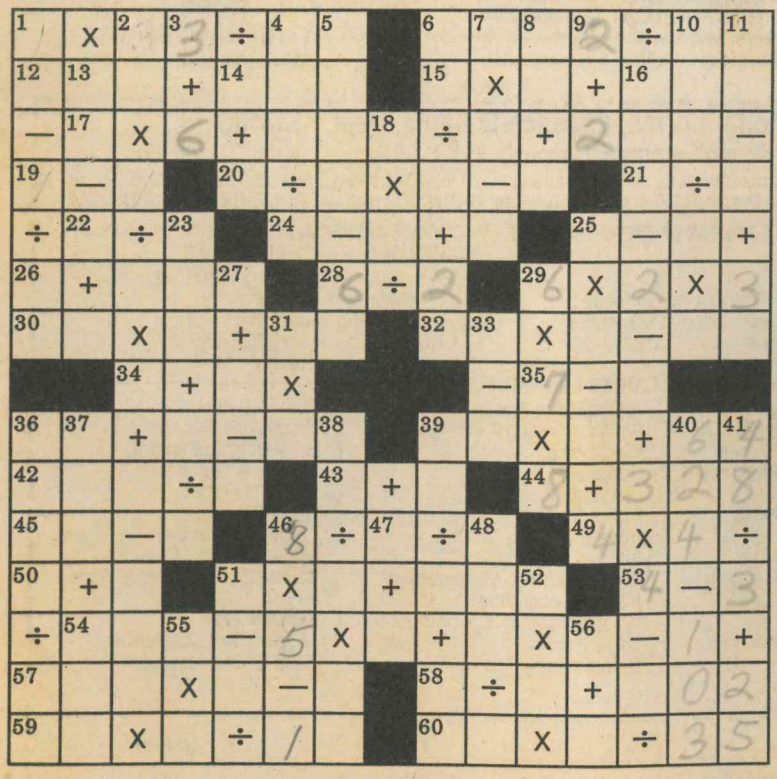


1. S + Q = V, and S is smaller than Q
2. In one of the two diagonals (P,T,X or R,T,V) the three numbers are in ascending order when read from top to bottom, and each is evenly divisible by the same number, a number larger than 1
3. P = R + U
4. In one of the diagonals, all three numbers are perfect squares, in some order (A perfect square is the product of a whole number multiplied by itself. For example, 16 is a perfect square since 4 x 4 = 16)

CROSSMATH 1

This looks like a crossword, but it involves numbers, not words. The numbers given in the clues columns are the answers to simple math problems; the numbers you enter into the diagram will form the problems which result in those answers. All the arithmetic symbols (+, -, x, ÷) have already been entered into the appropriate squares in the diagram. Use the symbols, the crossing numbers, and a bit of logic to determine the digit to enter into each blank square (one digit per square). An important thing to remember: The arithmetic is to be done in the order in which it reads, from left to right or top to bottom — for example, 1 + 2 x 3 equals 9 (1 + 2 = 3; 3 x 3 = 9). If done in any other order, your solution won't work. Arithmetic signs at the beginning or end of a problem (as in 25-Across) should be ignored. You will never use zero as the first digit of a number, though there may be zeroes used as later digits. There are no negative numbers used here; nor are there any fractions used.

There is another Crossmath on page 44.



Solution is on page 58

ACROSS

1. 36
6. 49
12. 909
15. 814
17. 178
19. 0
20. 10
21. 4
22. 2
24. 5
25. 3
26. 122
28. 3
29. 36
30. 74
32. 244
34. 15
35. 7
36. 7
39. 160
42. 273
43. 15
44. 336
45. 45
46. 2
49. 16
50. 3
51. 209
53. 1
54. 1,188
57. 797
58. 502
59. 31
60. 14

DOWN

1. 2
2. 7,928
3. 9
4. 32
5. 3,941
6. 28
7. 61
8. 14
9. 4
10. 248
11. 135
13. 50
14. 14
16. 3,215
18. 18
23. 52
25. 46
27. 11
29. 336
31. 18
33. 6
36. 302
37. 515
38. 3,762
39. 89
40. 521
41. 41
46. 39
47. 4
48. 67
51. 4
52. 6
55. 18
56. 6

FIGURE LOGIC 7

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Directions for solving Figure Logics are on page 12.
If you need help starting this puzzle, a starting digit is given on page 63.

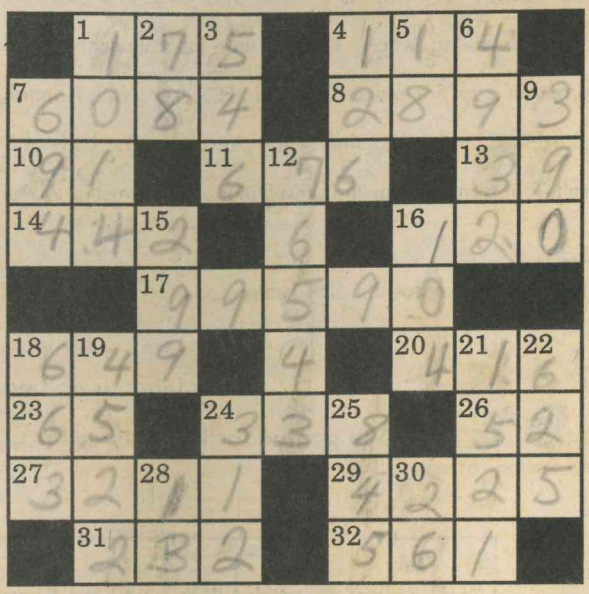
ACROSS

1. Six more than the square of 28-Down
4. Ten more than 16-Down
7. Square of 2-Down
8. 7-Across minus 27-Across
10. 2-Down plus 28-Down
11. 26-Across times 28-Down
13. Three times 28-Down
14. 20-Across plus 30-Down
16. Average of 4-Across and 4-Down
17. Sum of digits is thirty-two
18. Digits of 7-Down rearranged
20. Four times 16-Down
23. 13-Across plus 30-Down
24. 28-Down times 30-Down
26. Twice 30-Down
27. 29-Across minus 1-Down
29. Square of 23-Across
31. 5-Down times 28-Down
32. Center digit is sum of first and last digits

DOWN

1. 2-Down times 28-Down
2. Three times 30-Down
3. 25-Down minus 15-Down
4. Seven times 5-Down
5. Sixty less than 2-Down
6. 27-Across plus 21-Down
7. 11-Across plus 5-Down
9. Ten times 13-Across
12. Consecutive digits in reverse order
15. 23-Across plus 31-Across
16. Twice 26-Across
18. 11-Across minus 28-Down
19. Digits of 29-Across rearranged
21. Square of 13-Across
22. Three less than twice 24-Down
24. Last digit is sum of first digits
25. 23-Across times 28-Down
28. One-fourth of 26-Across
30. One-ninth of 31-Across

Solution is on page 58



SCRAMBLED MATH

Below you'll find five "scrambled" math problems. For each problem, you are to arrange the order of the digits in each row on the left so that the bottom row, when subtracted from or multiplied to the top, will equal the answer given on the right.

Solutions are on page 63.

A.

3399	9933
−0258	−2058
7875	

B.

1459	9145
−0467	−4076
5069	

C.

1588	5881
−2267	−2627
3254	

D.

2478	
×0233	
9988710	

E.

0069	
×4569	
63302400	

LOGIC PROBLEM

9. HOOPS STARS

by RANDALL WHIPKEY

Summerset College's women's basketball coach Dora Dunkett has her eye on the NCAA championship. Her starting five — each from a different high school — have come together to make the Screamin' Eagles into a point-scoring, rebounding, shot-blocking machine. Player Jordan, only a freshman this year, has already been pegged by the press as a favorite for the 1996 Olympic team. From the following clues, put together the starting lineup by name, high school, position played, and height (each is a different height). Note for non-fans: A five player lineup consists of one center, two forwards, and two guards.

1. The center is the tallest player and is 10" taller than the shortest.
2. Neither Robinson nor Wilkins is the recruit from Our Lady of Sorrows.
3. Allison doesn't play guard.
4. The player from Central City High is 1" taller than Bird, who plays forward.
5. Keri is 2" taller than Ewing, who is 4" taller than the Polytechnic grad.
6. Bird and the recruit from Summerset Township H.S., who isn't Hannah, were both high-school All-Americans.
7. Shelley, a guard, is 3" taller than the former star of the Our Lady of Sorrows High School team.
8. Didi, who isn't Robinson, is taller than the Summerset Township player.
9. Hannah is 5'4".
10. The recruit from Wild Lake doesn't play center.

Solution is on page 60.

See page 6 for instructions for using standard charts.

	Bird	Ewing	Jor.	Rob.	Wilk.	ctr.	fwd.	guard	CCH	OLS	Poly.	Sum.	WL	height
Allison								X						
Didi				X								X		
Hannah														
Keri		X												
Shelley														
height						X			X					
	X													
Central City High														
Our Lady of Sor.				X	X									
Polytechnic		X												
Summerset Twp.	X													
Wild Lake						X								
center	X													
forward	•													
guard	X													

FISCUS' HIBISCUS

Flora Fiscus bought a hibiscus,
And its flowers initially
Totaled eight in number,
With new buds aslumber
Waiting pragmatically
To burst into splendor
At daily count rendered
Steady as steady could be.

Flowers died, too, at a constant rate
Two-thirds of the blooming pace.
For blossoms that withered,
Ms. Fiscus na' dithered
But pinched off the reprobates.

The flowers that bloomed
On the seventh day
Were one-fifth of the blossoms she saw
At the end of that day;
Knowing this, can you say
How many the plant,
A bright Red Celebrant,
Displayed on the twentieth day?

Answer is on page 62

BINGO PLAYS 2

San Jose Shorts

See page 17 for solving instructions and Bingo Plays 1.

1. The number one does not appear in row P, L, or A, column N, G, or O, or square YB or SI, or in the winning combination.
2. The number two does not appear in square PO, LB, LN, LO, YI, YO, SB, or SN.
3. The number three does not appear in row P, A, or Y, or column B, I, or O.
4. The number four does not appear in row L or A, column B, or square PI, PO, YG, YO, or SN.
5. The number five does not appear in row L or S, column I, or square PG, AO, YB, YN, or YO.
6. The number six does not appear in row A, column B or I, or square PG, LN, YG, SG, or SO.
7. The number seven does not appear in row P, column B, or square LO, AG, YG, or YO.
8. The number eight does not appear in row L, A, Y, or S, column I, G, or O, or in the winning combination.
9. The number nine does not appear in row S, column N, square LI, LO, AG, YI, or YG, or in the winning combination.
10. Zero does not appear in row A or S, column N, or square LI.
11. The number 66 is the only double-number combination on the card.

	B 1-15	I 16-30	N 31-45	G 46-60	O 61-75	
P	8	20	45	49	65	P
L	9	27	37	60	66	L
A	5	29	FREE	52	72	A
Y	2	17	42	50	69	Y
S	1	24	36	47	74	S
	B	I	N	G	O	

Solution is on page 58

WORD ARITHMETIC

Directions for solving are on page 9.

Solutions are on page 63.

28. FORMIDABLE

0 1 2 3 4 5 6 7 8 9

```
          OIL
      ------------
LIE | ORDEAL
      LIE
      ---
      IOFA
      MMEA
      ----
       BOFL
       ABER
       ----
        MOA
```

29. FLIMSYCAPE

0 1 2 3 4 5 6 7 8 9

```
          LIE
      ------------
CALL | PALACE
       CALL
       ----
       IFFCC
       LMSII
       -----
        CCSSE
        CFMEE
        -----
         CFYF
```

30.

0 1 2 3 4 5 6 7 8 9

```
          TAG
      ------------
SEES | MOSTLY
       TGGT
       ----
       SIYIL
        LOGA
        ----
         OMSY
         OTEG
         ----
          AL
```

31.

0 1 2 3 4 5 6 7 8 9

```
          ART
      ------------
NON | MARTYR
      MLRU
      ----
       RPUY
       TRNR
       ----
        TLOR
        LYMY
        ----
         YLN
```

32. WEHADINPUT

0 1 2 3 4 5 6 7 8 9

```
          HUNT
      ------------
HIND | PAINTED
       IEHU
       ----
       HHHUT
       HWIEH
       -----
        EPPPE
        EIAUD
        -----
         HAUPD
         HAWPN
         -----
          PTU
```

33. ELVISONACD

0 1 2 3 4 5 6 7 8 9

```
          SANS
      ------------
LED | OLDIES
      SIN
      ---
       CI
       ANI
       ---
        AEE
        NOS
        ---
         SNS
         SIN
         ---
          VC
```

34. INOCULATES

0 1 2 3 4 5 6 7 8 9

```
          LEA
      ------------
NAT | STEAL
      ECL
      NUCA
      NCCA
      ----
       NIIL
       NIIO
       ----
        C
```

LEA
#1, Aurora, Hail, and Soda Motor.

35. EBONYCHAIR

0 1 2 3 4 5 6 7 8 9

```
          ARI
      ------------
BOO | RANCH
      ICY
      BBRC
      BERI
      ----
       RAH
       RAH
       ---
        E
```

36.

0 1 2 3 4 5 6 7 8 9

```
          OK
      ------------
ILL | OZONE
      RNIM
      IEKE
      IFKO
      ----
       EFO
```

LOGIC PROBLEM

10. WAITING FOR THE BUS

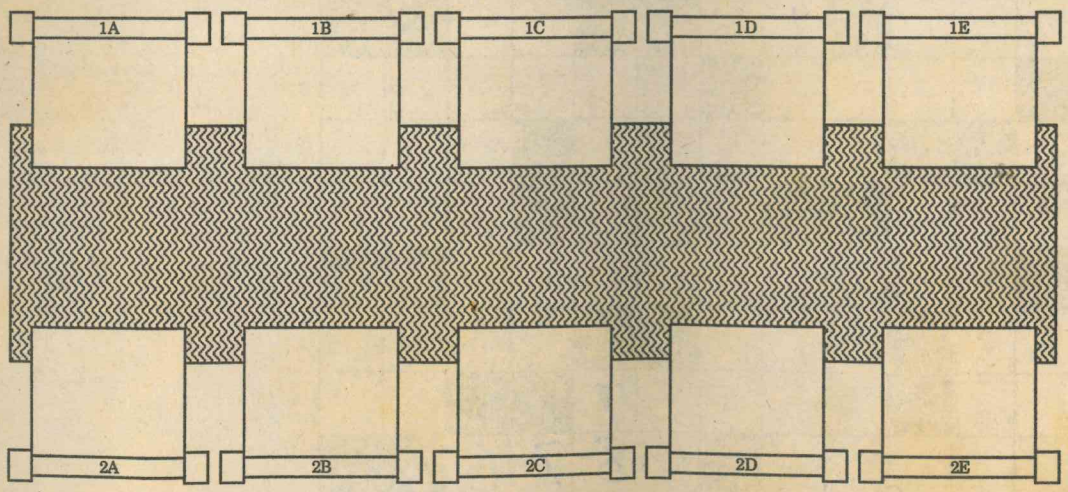
by W. LEE MOSS

Janet, George, and eight other people are sitting in a bus depot in Salina, Kansas. Some are traveling alone, others are traveling together and thus are sitting in consecutive seats of the same row; those who are together are related in some way. From the clues below, can you determine the seating arrangement of the travelers, along with each traveler's full name, destination, and reason for going there?

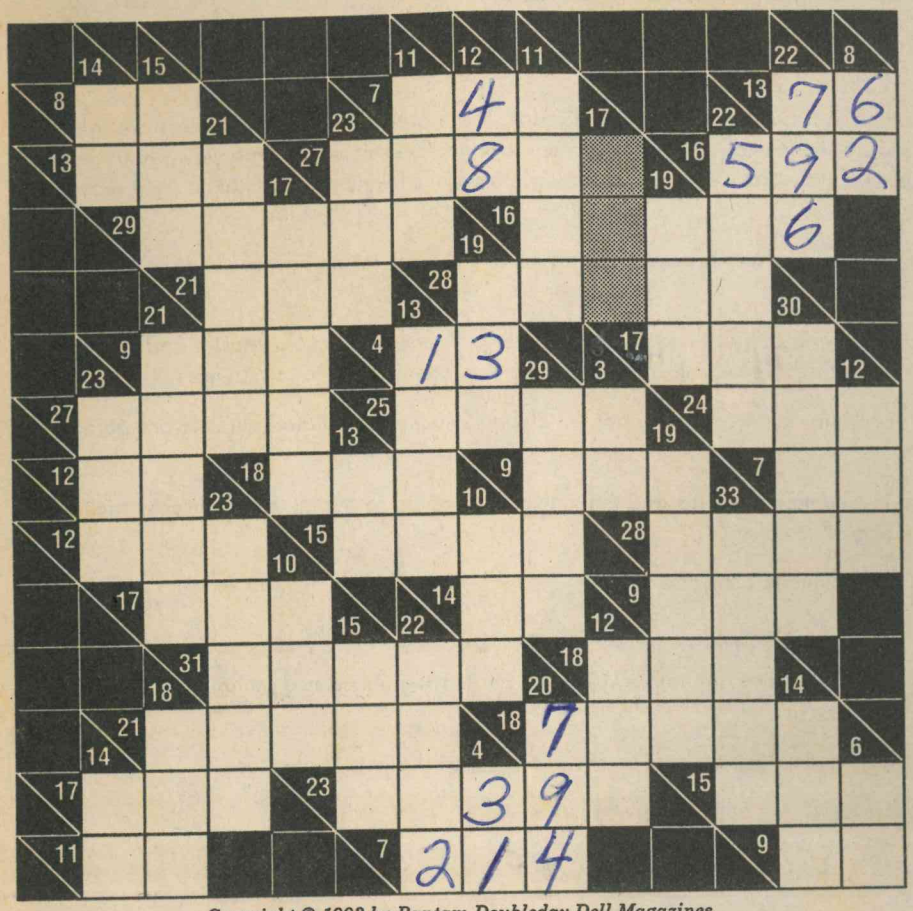
1. Martha is sitting between Mrs. Turner and Laura Vine and is directly facing the man who is taking his new bride to New York City for their honeymoon.
2. Sandy and Mandy, twin sisters, are traveling with one of their parents; Sandy is directly facing Mr. Martin and Mandy is directly facing Peter (who is not going to Denver). Those two men are traveling alone; one is going to Los Angeles.
3. Jake, who sits in seat 1C, is going on vacation; his last name is not Goldblum. Exactly two related persons are going to Pittsburgh.
4. Jerry is sitting between a woman whose last name is Douglas and the man who is going to Miami and is directly facing a woman who, together with a relative, is going off to college.
5. One man is going to Denver; another man is moving to a new home.
6. Florence is not going to Kansas City.
7. Two grown, unmarried sisters are traveling together; they are not the ones who are leaving Salina and returning to their home town.
8. Mr. Morrison is sitting on the immediate right-hand side of the man who is departing on business to another city.

Solution is on page 60.

Use the illustration of the seating arrangement below to enter information about each traveler as you determine it.



CROSS SUMS



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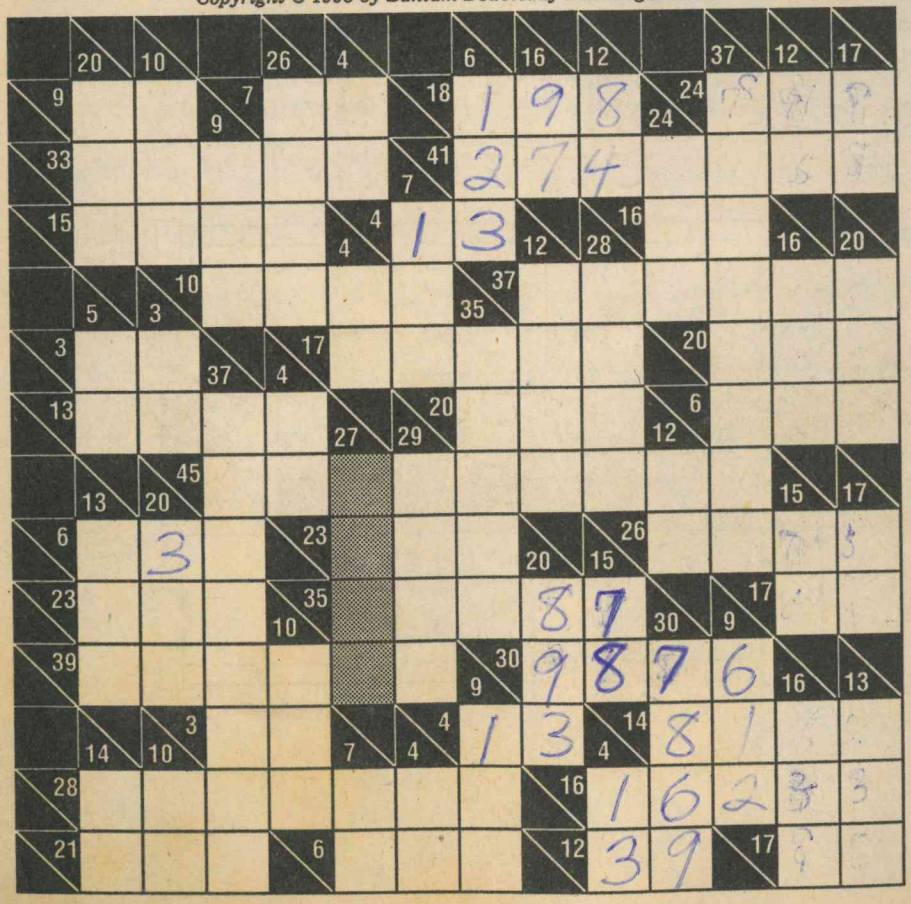
Directions for solving are on page 10. We have shaded one area in each diagram. If you need help starting a puzzle, the digit combination to go into its area is listed on page 63.

NUMBER 13

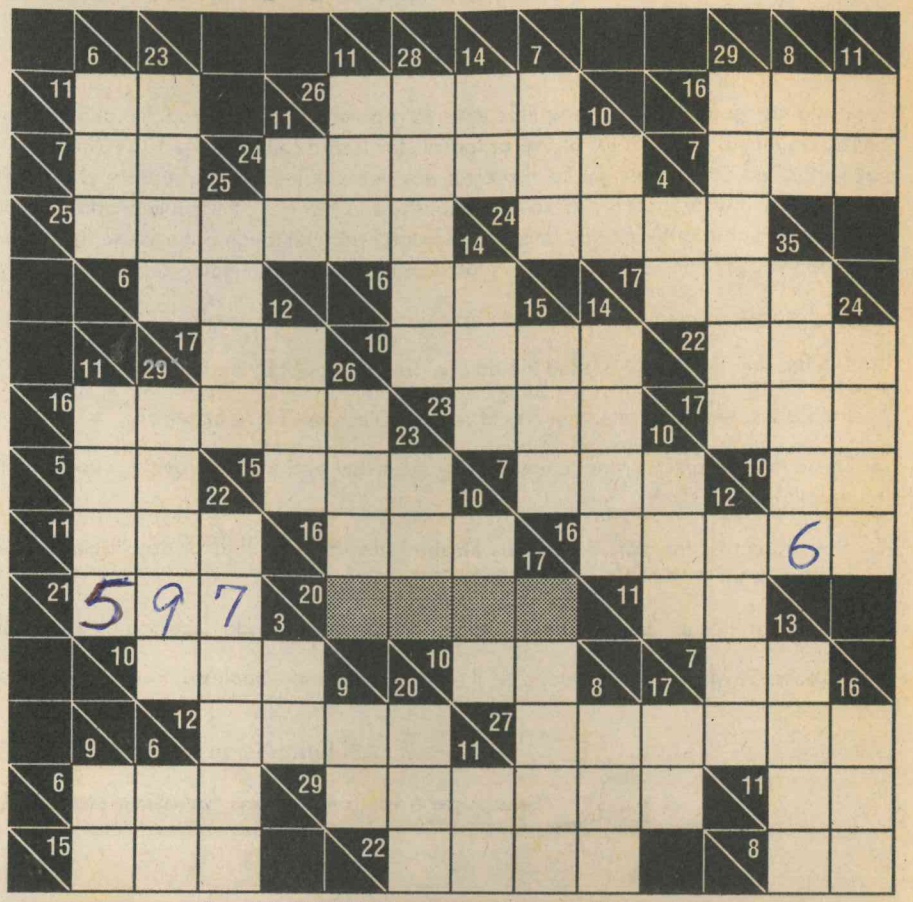
Solutions are on page 57.



NUMBER 14

CROSS SUMS

NUMBER 15



Solutions are on page 57.

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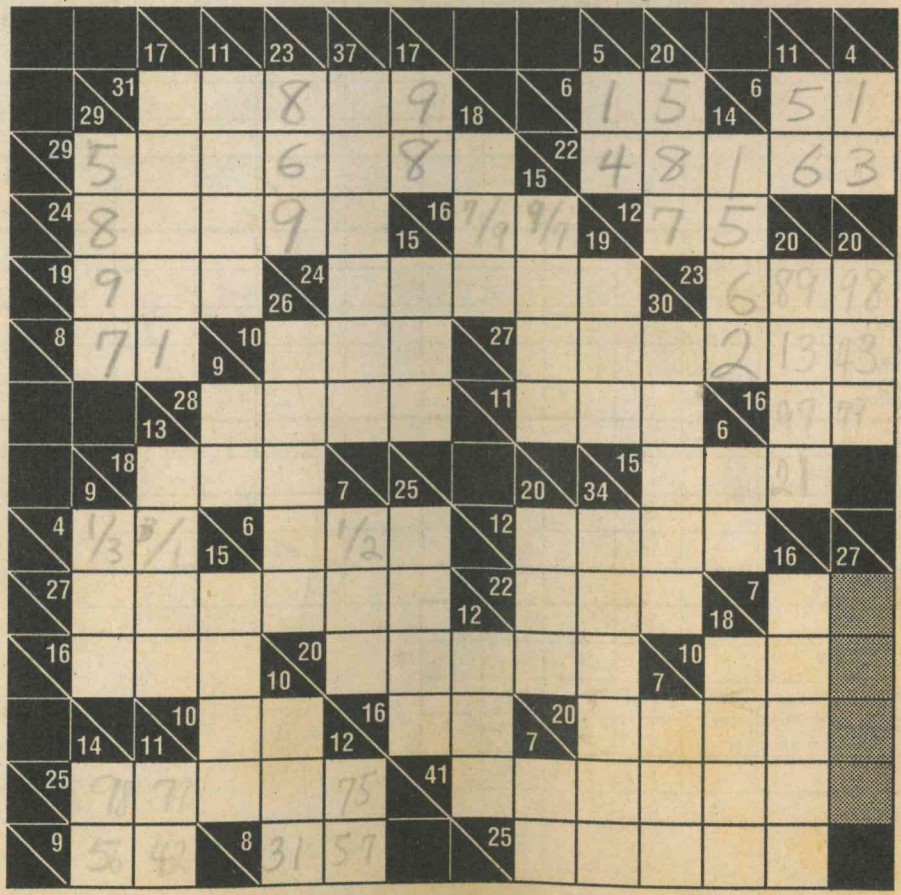
NUMBER 16



LOGIC PROBLEM

11. TAMING THE TRAFFIC

by DIANE BALDWIN

Forestville has gone from a sleepy little town to a potential mini-metropolis, and the traffic commission wants to keep things under control. So they drew up a list of five proposals for traffic-control projects on Apple Street and four other major thoroughfares; one proposal called for a stop sign. Each project was necessitated by the presence of a public building, including a school, where traffic converged. All five proposals passed unanimously, and last week the public-works department swung into high gear, completing each of the projects on a different day (Monday through Friday), though not necessarily in the order they'd been proposed. From the clues given, can you tell each day's project, its location by street and building served, and which lettered proposal it was on the list?

1. Proposals A, B, and C, were, in no particular order: the crosswalk, the project by the bank, and the one on Elm Street.
2. The flashing light was installed the day before the project by the library and the day after the one on Oak Street.
3. Proposal C was completed the day after the project on Cherry Street.
4. These three projects were completed consecutively and in this order: proposal C, the one by the hospital, and the stoplight installation.
5. The project by the post office was finished the same number of days before Wednesday as the one on Maple was after Wednesday.
6. The five proposals were: proposal B, the one completed Tuesday, the one by the hospital, the one on Oak, and the stoplight.
7. Proposal E, which wasn't the one by the post office, was completed the day before the yield sign went up.

Solution is on page 60.

See page 6 for instructions for using standard charts.

	cross.	flash.	stop light	stop sign	yield	Apple	Cherry	Elm	Maple	Oak	bank	hosp.	lib.	post off.	sch.	A	B	C	D	E
Monday			X				X													
Tuesday			X			X	•	X						•		X	X	•	X	X
Wednesday			X			X	X	X		•							X			
Thursday							X			X	X	•	X				X			
Friday		X					X			X		X						X		X
A																				
B			X						X	X		X								
C		X	X				X		X		X	X	X	•	X					
D	X									X	X									
E	X	X			X		X			X	X									
bank	X							X		X										
hospital		X	X				X		X	X										
library		X								X										
post office	X	X	X				X		X											
school																				
Apple																				
Cherry	X	X	X																	
Elm	X																			
Maple		X	X																	
Oak	X	X	X																	

FIGURE LOGIC 8

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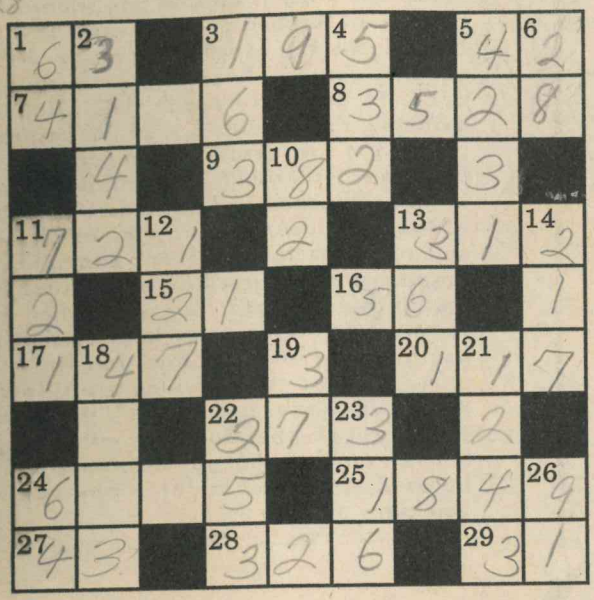
Directions for solving Figure Logics are on page 12.
If you need help starting this puzzle, a starting digit is given on page 63.



ACROSS

1. 5-Across plus 15-Across
3. 13-Across minus 20-Across
5. Twice 15-Across
7. Sum of digits is twenty
8. 1-Across times 16-Across
9. 15-Across plus 13-Down
11. 3-Across plus 16-Across
13. Four less than 23-Down
15. Consecutive digits in descending order
16. Twice 6-Down
17. Seven times 15-Across
20. Digits of 11-Down rearranged
22. Three times 26-Down
24. 7-Across plus 25-Across
25. Square of 27-Across
27. One more than 5-Across
28. 9-Across minus 16-Across
29. Ten more than 15-Across

DOWN

The sum of the digits in each answer is 10; there are no zeros in the solution.

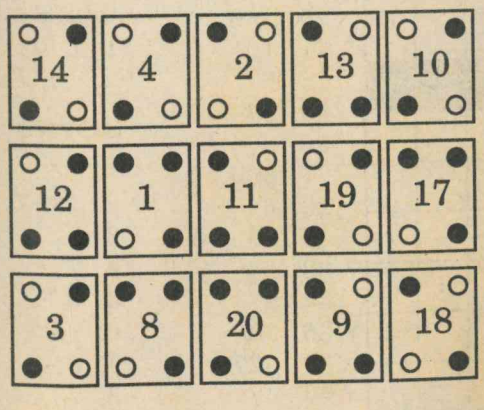
Solution is on page 58

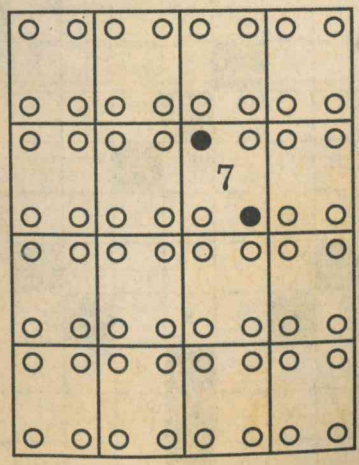
SUMSPOTS

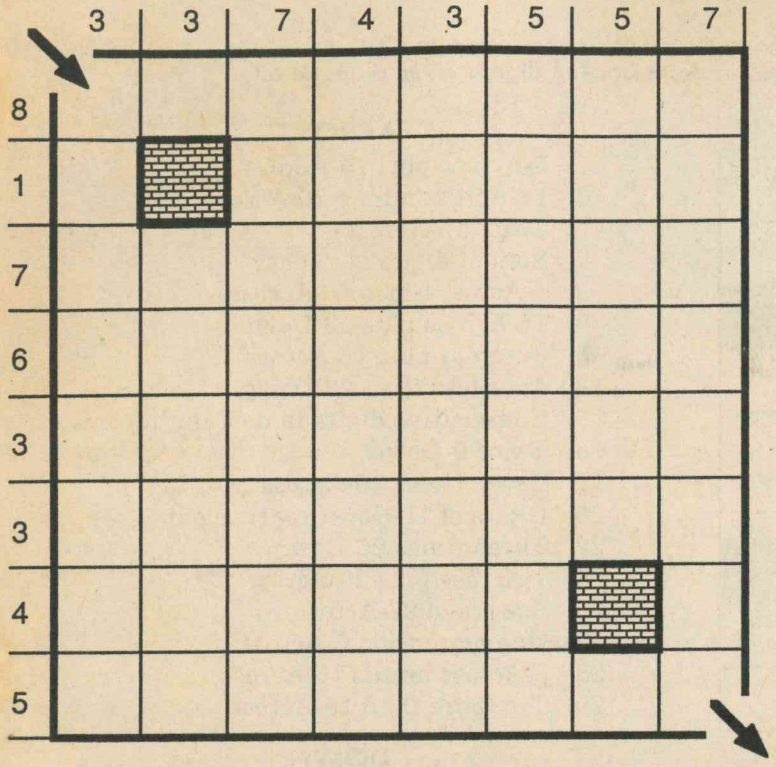
The idea of Sumspots is to form a magic number square by placing numbered tiles into the squares of the diagram. (See page 15 for an explanation of a magic number square.) You may use each tile once and only once, so it is a good idea to cross off each tile as you use it. HANDICAP: Each tile has a black or white dot in each corner. As a tile is placed next to another tile in the diagram, the dot patterns must match, black dots next to black dots and white dots next to white dots. These patterns must match on every side that touches another tile. For example, in this puzzle, the 12 tile could go above the 17 tile, since the 12 tile has two black dots on the bottom and the 17 tile has two black dots on the top; however, the 12 could not go to either side of the 17, since those dots would not match. As you place each tile in the diagram, blacken in the appropriate dots in all corners.

Solution is on page 58.

TOTAL: 42







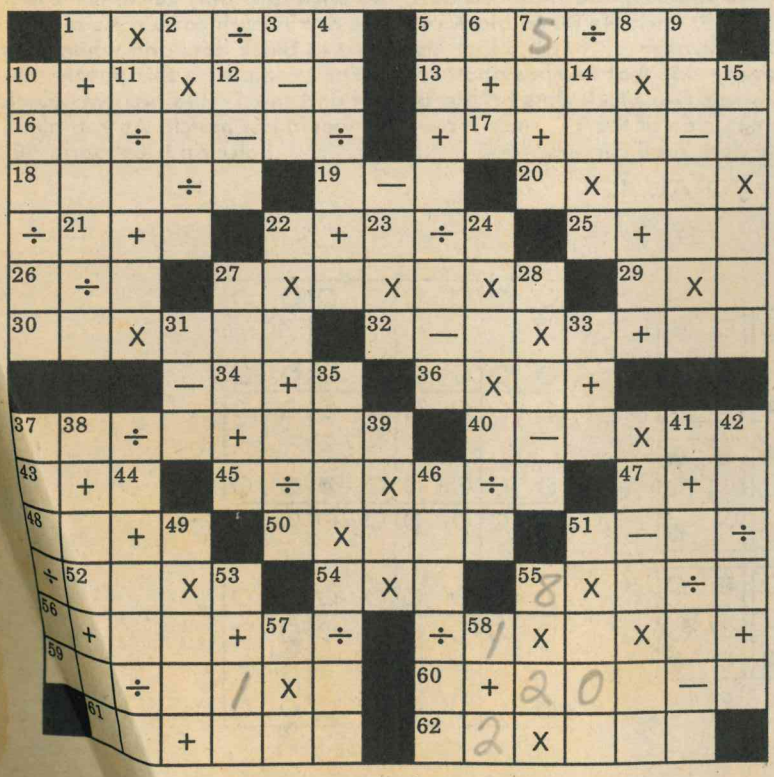
MATH MAZE

You'll have to use some deductive reasoning to make your way from start to finish in this maze. The maze is divided into squares; the number at the beginning of each row and column tells you exactly how many of those squares you will have to cross through in order to correctly reach the finish. For example, the number 8 is at the beginning of the first row across; this means you will have to cross through all eight of the boxes in that row. You need not cross through all of them at once; you may leave a row or column and return to it. For example, you might cross the first box of the first row, then turn downward. You would then have to return to the first row later so that you use all eight boxes before you finish the maze. No diagonal moves are allowed. Bricked-in boxes are "stops"; you cannot pass through one. Solving hint: To begin, blacken any box that you determine will not be used, and place a dot in any box that you know must be used.

Solution is on page 58.

CROSSMATH 2

See page 34 for solving instructions and Crossmath 1.



Solution is on page 58

ACROSS

1. 1
5. 5
10. 10
13. 1,533
16. 7
17. 47
18. 121
19. 2
20. 336
21. 10
22. 6
25. 53
26. 3
27. 560
29. 6
30. 26,910
32. 94
34. 9
36. 36
37. 827
40. 48
43. 8
45. 14
47. 9
48. 47
50. 406
51. 2
52. 294
54. 32
55. 4
56. 28
58. 27
59. 4
60. 196
61. 540
62. 19,282

DOWN

1. 131
2. 18
3. 3
4. 7
5. 0
6. 16
7. 64
8. 76
9. 56
10. 3
11. 4
12. 1
14. 48
15. 1,210
22. 40
23. 18
24. 16
27. 605
28. 39
31. 2
33. 11
35. 37
37. 11
38. 106
39. 16
41. 0
42. 14
44. 3
46. 38
47. 84
49. 42
51. 2,727
53. 21
55. 16
57. 32
58. 3

LOGIC PROBLEM

12. CHECK-OUT TIME

by SUSAN ZIVICH

The Lake County Library offers its patrons much more than books. During the last week (Monday through Saturday), six people came in on different days to check out a variety of things. From the following clues, can you determine each day's borrower by full name and the kind of book (one was a short-story collection), classical recording, movie on video, and art reproduction (one was a Picasso) each chose to borrow?

1. Matt selected a Bach violin concerto, and Saturday's library-goer chose a recording of Vivaldi's "Four Seasons."
2. Beth, who went earlier in the week than Ms. Ortega, took the video "Going My Way."
3. Georgia wanted a Monet print and Burrows selected a Degas.
4. The patron who took the video "Rear Window" also checked out a biography of Alfred Hitchcock.
5. Rosenbaum wanted an Agatha Christie mystery.
6. Lucy came on Thursday to find that "Gone With the Wind" had been checked out the day before, so she chose another movie.
7. Andrew Hines returned an overdue book the day he stopped in; he promised to be on time with his new selections.
8. The patron who chose a work of 19th-century fiction also took a Renoir print.
9. The man who checked out the Chopin recording visited the library the day after the man who took the video of "The African Queen."
10. DeCoeur, who was not at the library Friday, took the Mozart opera selections.
11. Scott, who reads science-fiction, was not the one who chose the Degas print.
12. One patron took waltzes by Strauss and the video "Casablanca."
13. The patron who came Monday took an ancient history book and the one who came Tuesday chose a Chagall reproduction.
14. Sullivan took the movie "Ben-Hur."
15. The man who took home the Wyeth print also checked out Beethoven's Ninth Symphony.

Solution is on page 60.

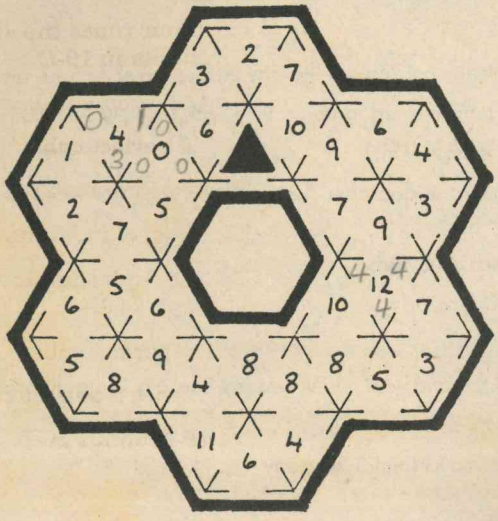
This problem contains so many variables that a standard chart would not be readable. Instead, please use the space below for solving.

TRIGONS

Trigon is a new brain teaser to test your powers of logic and deduction. Each diagram is made up of a series of open triangles with a number at the center; that number represents the sum of the digits you are to write into the spaces on the sides of the triangles. Where two triangles share a side, they share the number to be written into that side. For the first puzzle, all the combinations use only the digits 0 through 4; for the second puzzle, the combinations use the digits 0 through 6. We've listed all the possible combinations for every sum in the small chart accompanying each puzzle, so all you have to do is figure out which of those combinations belongs where (not as easy as it sounds!). The numbers in a combination can go in any order around their triangle, and each combination will be used exactly once. You can begin Trigon 1 by filling in 0-0-0 around the triangle with 0 at its center and 4-4-4 around the triangle with 12 at its center. It helps to look for large sums adjacent to small sums, as they will have fewer possibilities for common digits. If you're still stuck, turn to page 61 for more help.

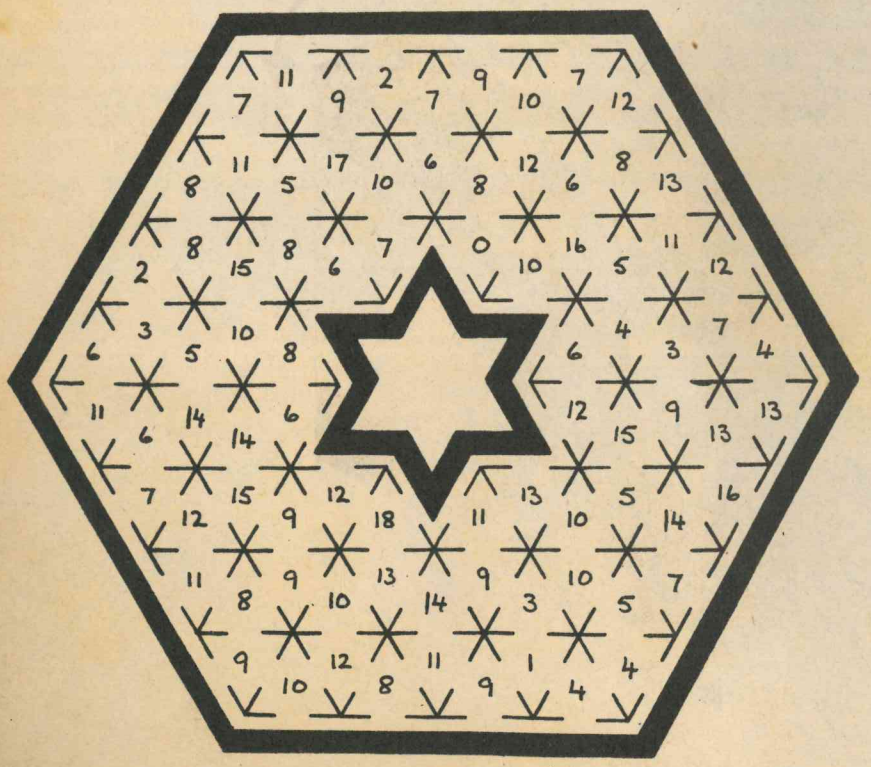
Solutions are on page 63.

1.



0	000				
1	001				
2	002	011			
3	003	012	111		
4	004	013	022	112	
5	014	023	113	122	
6	024	033	114	123	222
7	034	124	133	223	
8	044	134	224	233	
9	144	234	333		
10	244	334			
11	344				
12	444				

2.



0	000							
1	001							
2	002	011						
3	003	012	111					
4	004	013	022	112				
5	005	014	023	113	122			
6	006	015	024	033	114	123	222	
7	016	025	034	115	124	133	223	
8	026	035	044	116	125	134	224	233
9	036	045	126	135	144	225	234	333
10	046	055	136	145	226	235	244	334
11	056	146	155	236	245	335	344	
12	066	156	246	255	336	345	444	
13	166	256	346	355	445			
14	266	356	446	455				
15	366	456	555					
16	466	556						
17	566							
18	666							

FIGURE LOGIC 9

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Directions for solving Figure Logics are on page 12. This puzzle is a cube — so instead of entering numbers in two directions, you will enter numbers in three directions. Direction A goes down and to the left, Direction B goes down and to the right, and Direction C goes across. If you need it, a starting help is on page 63.

DIRECTION A

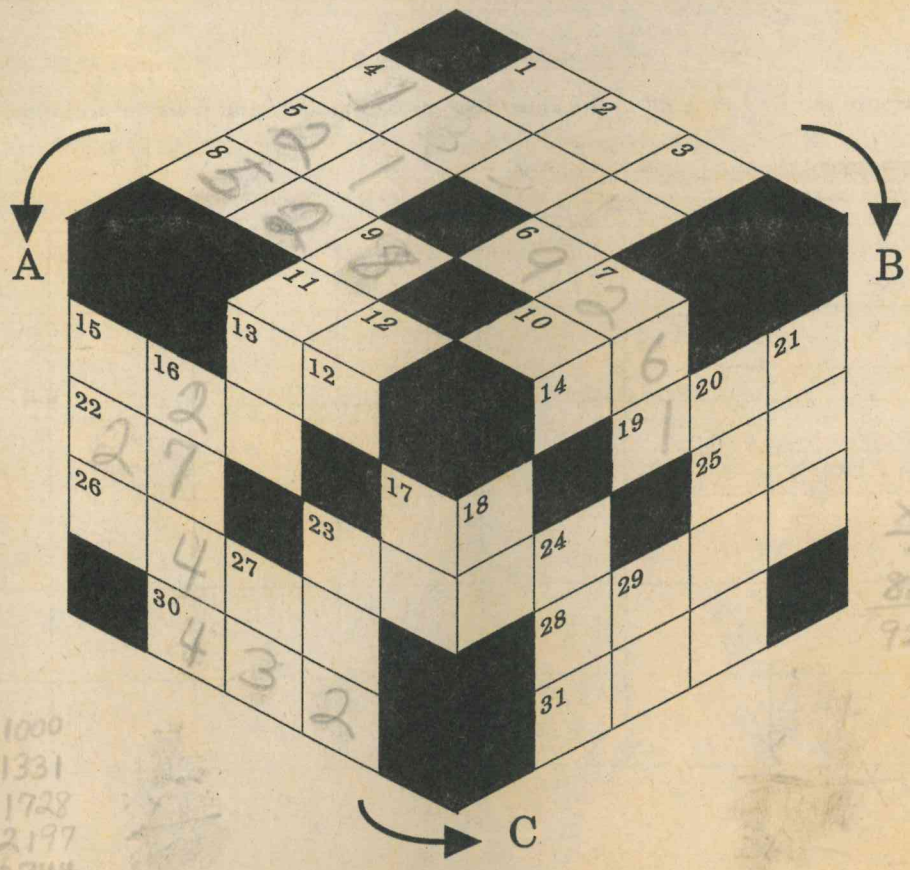
1. 9-A minus 6-B
2. Cube root of 22-C subtracted from cube root of 16-A
3. 31-C plus 2-A
4. 30-C minus 5-B
7. 27-A minus 11-B
9. Sum of its digits equals 13-C
12. Sum of the digits in 1-A
15. 25-C plus twice 13-C
16. A perfect cube
17. 17-C minus cube root of 22-C
23. Five more than 4-A
27. 7-A plus 29-B

DIRECTION B

1. Digits of a perfect cube mixed up
4. A perfect cube
5. Cube root of 6-B
6. A perfect cube
8. A perfect cube
10. Cube root of 1-B plus cube root of 22-C
11. Middle two digits of 9-A
18. 25-C minus cube root of 22-C
20. A perfect cube
21. Last two digits equals 7-A
24. 18-B plus 29-B
29. 5-B plus 14-C

DIRECTION C

13. An odd number
14. 18-B minus 27-A
15. 5-B plus 24-B
17. Four times the sum of the digits in 19-C
19. An even number
22. A perfect cube
23. 20-B minus 28-C
25. Sum of its digits equals 10-B
26. 23-A plus product of 17-A and 24-B
28. A perfect cube
30. Twice a perfect cube
31. 3-A minus 10-B



Solution is on page 58

LOGIC PROBLEM

13. SHOP AROUND

by ROBERT NELSON

George Dittany needs a new car. As he is recently retired, he has plenty of time to shop around; so he has visited all five auto dealers in his town. Each dealer represents a different auto manufacturer, and on the basis of what George said he wanted — nothing showy, but he does want automatic transmission, air conditioning, and an AM/FM radio — each dealer recommended the model by that maker that would best suit George's needs. George took careful notes on each car, including base price and price of his requested options; now he must sit down with his notes and compare. From the following clues, can you identify the maker and model and price breakdowns for the five cars?

1. The five cars are: the Arden, the model A1A, the one with a base price of $9,100, the one whose air conditioner costs $500, and one of the two whose radio costs $300.
2. The base price of the Erdman is $400 less than that of the model SSS, but automatic transmission is included in the base price of the latter.
3. The base prices and all option prices are even multiples of $100; every such individual price (not counting options included in a base price) is within $100 of the price of another model or option of the same type.
4. The base price of the Corson is $100 more than that of the model 345, but air conditioning is included in the base price of the latter.
5. The total price with George's selected options for each of the five cars is exactly $10,000.
6. All automatic transmission prices are different, but each is the same as the air conditioning price for another car. For example, the model VFC's automatic transmission is the same price as the Bostick's air conditioning.
7. The model 40M's base price is $100 less than that of the Dilton, but the radio is included in the latter's base price.
8. The price of air conditioning in the Arden is only half that of the model 345, but the model 345's automatic transmission price is only half that of the one whose air conditioning costs $400 (which is not the Arden).
9. No car's base price includes more than one of George's options, and no two cars include the same no-cost option.
10. The base price of the model 40M is nine times the combined prices of its options.

Solution is on page 61.

To help George compare the five cars, fill in the chart with make, model, and price information as you determine it.

make	model	base	trans.	AC	AM/FM	total
Arden						$10,000.
Erdman						$10,000.
Corson						$10,000.
Dilton						$10,000.
Bostick						$10,000.

WORD ARITHMETIC

Directions for solving are on page 9.

Solutions are on page 63.

37. GRAVELPITS

0 1 2 3 4 5 6 7 8 9

```
          1769
          R I P S
5232 | 9258741
L A V A | S A L T I E R
        5232
        L A V A
        40267
        E G A P I
        36624
        V P P A E
        36434
        V P E V E
        31392
        V R V S A
        50421
        L G E A R
        47088
        E I G T T
        3333
        V V V V
```

38. VIOLETBUDS

0 1 2 3 4 5 6 7 8 9

```
              3294
              L O S E
9578 | 31553495
S T U D | L I T T L E S T
        28734
        O D U L E
        28194
        O D I S E
        19156
        I S I T B
        90389
        S V L D S
        86202
        D B O V O
        41875
        E I D U T
        38312
        L D L I O
        3563
        L T B L
```

39. PISMOBEACH

0 1 2 3 4 5 6 7 8 9

```
              54551
              B O B B I
545 | 29730442
B O B | S H A M P O O S
      2725
      S A S B
      2480
      S O C P
      2180
      S I C P
      3004
      M P P O
      2725
      S A S B
      2794
      S A H O
      2725
      S A S B
      692
      E H S
      545
      B O B
      147
      I O A
```

40. _____R

0 1 2 3 4 5 6 7 8 9

```
          S U M
9
R U N | S P L A S H
      U N O L
      U S M S
      L O M H
      99
      H R R H
      2
      H A S M
      9
      S M R
```

41. SPLITBOARD

0 1 2 3 4 5 6 7 8 9

```
          632
          O I L
839 | 530486
R I D | B I S T R O
      5034
      B S I T
      2708
      L A S R
      2517
      L B P A
      1976
      P D P O
      1678
      P O A R
      238
      L I R
```

42. _____

0 1 2 3 4 5 6 7 8 9

```
          A D A
L O G | D A M A G E
      D D O U
      Y I O G
      Y Y I A
      D I I E
      D D O U
      G Y
```

43. JOURNALIST

0 1 2 3 4 5 6 7 8 9

```
          28
          U S
3129 | 89766
R O U T | S T I L L
        6258
        L U A S
        27186
        U I O S L
        25032
        U A J R U
        2154
        U O A N
```

44. S_____

0 1 2 3 4 5 6 7 8 9

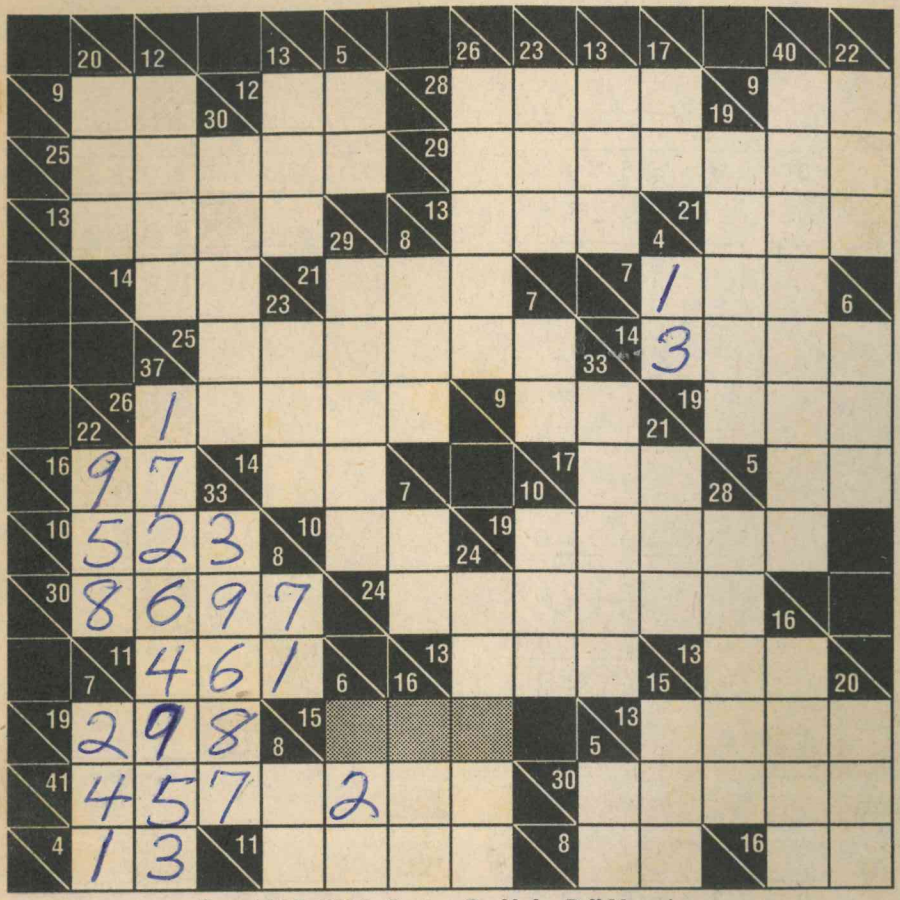
```
          I T
          0
N E A R | U N I T E S
        U T G U E
        00
        I A I S S
        0
        I S A G G
        H N I T
```

45. _____

0 1 2 3 4 5 6 7 8 9

```
          T I
S L Y | S U L K Y
      Y I U H
      Y B I Y
      K H H R
      Y B H
```

CROSS SUMS



Directions for solving are on page 10. We have shaded one area in each diagram. If you need help starting a puzzle, the digit combination to go into its area is listed on page 63.

NUMBER 17

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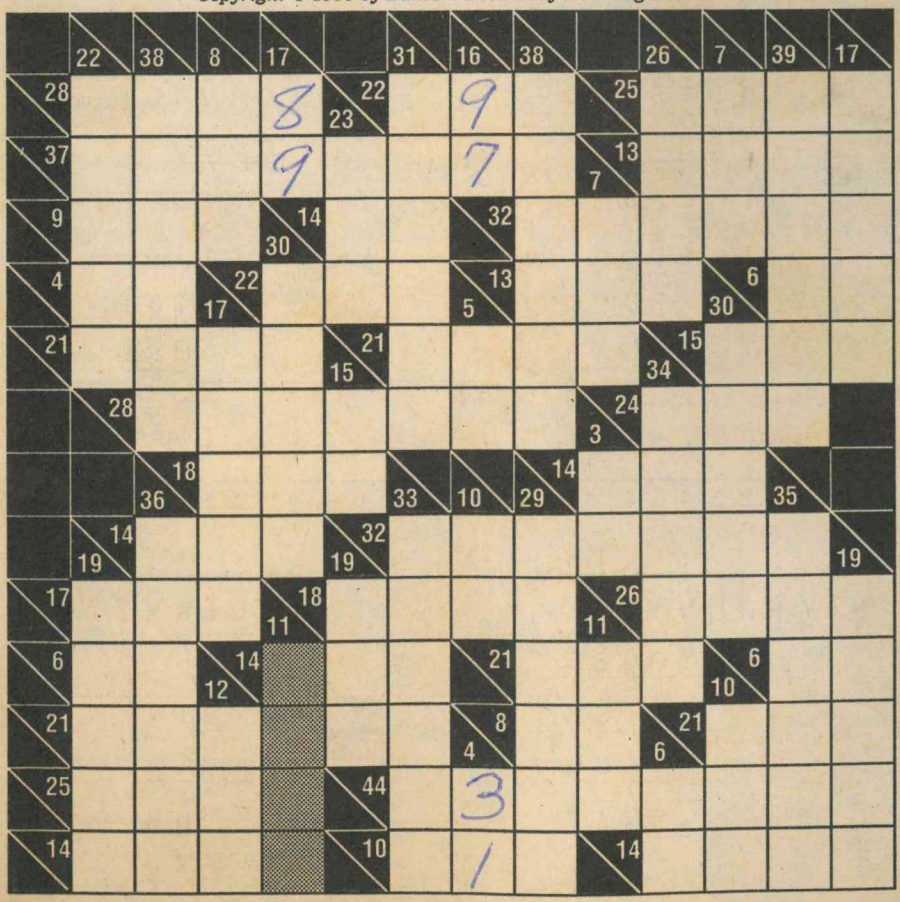
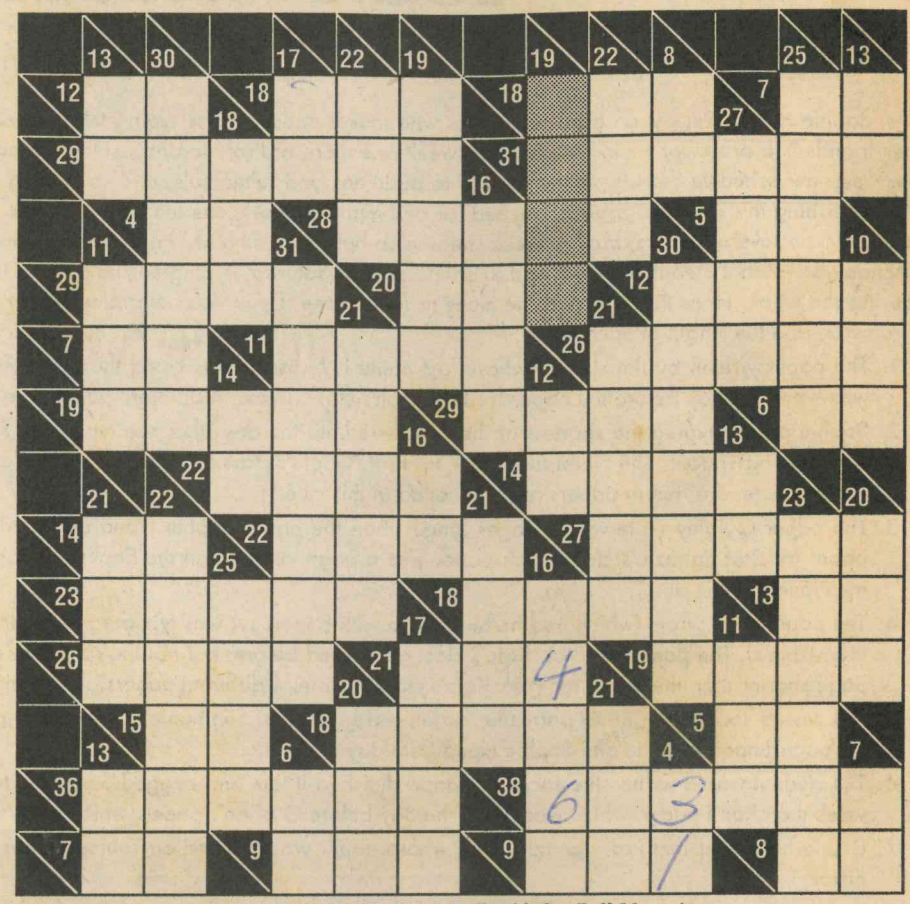
Solutions are on page 57.



NUMBER 18

CROSS SUMS

NUMBER 19



Solutions are on page 57.

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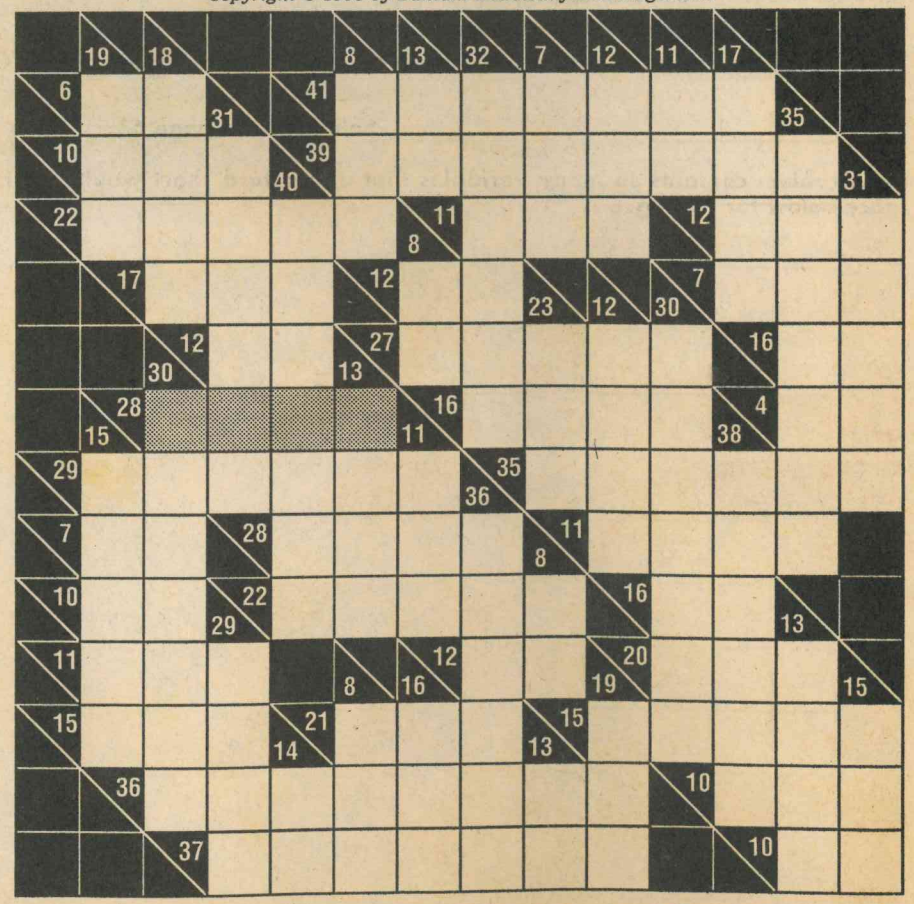
NUMBER 20



LOGIC PROBLEM
CHALLENGER

14. TYPE CASTING

by DAVID CHAMPLIN

Ms. Sophie Hunton-Peck is an aspiring actress who makes ends meet by typing term papers for students at the college where one of her friends is a professor — in fact, just last week one more of Prof. Jordan's students had brought her a paper to type. Typing lets her keep her schedule flexible so she can go to auditions and rehearsals, and she learns a lot by reading the papers as she types. After finishing the 25-page paper she typed for one man last week, she felt as though she had taken the course herself. In a full day she can type several papers, but last week she was so busy with other things that she managed to finish only one paper per day from Monday on — that meant she even had to spend part of Saturday typing so she'd finish the last of the six papers she'd been given during the week. From this info and the clues to follow, see if you can determine whose paper she typed each day, the class and professor, and the length of each paper.

1. The paper written by the student whose last name is Natsumi was typed the day before the economics paper. Victor's paper was typed the day before the paper for Prof. Holt's class. (Note: 4 different papers are mentioned in this clue.)
2. Sophie put off typing the shortest of the 6 papers until the day after she typed Mr. Munoz's paper, which was day after the anthropology paper. She typed the paper for Prof. Gupta's class (which isn't history) earlier in the week than the paper Ursula wrote. (Note: 5 different papers are mentioned in this clue.)
3. The paper Quigley write was 2 pages longer than the paper Sophie typed on Monday, which was 2 pages longer than the paper for Prof. Ignazio's class. Tim's paper was a page longer than the English literature paper. (Note: 5 different papers are mentioned in this clue.)
4. The paper Lang wrote (which had nothing to do with sociology) was typed earlier in the week than Wendy's (which was longer than Lang's). The paper for Prof. Kato's class was typed before, but not the day before, the psychology paper (which was one page shorter than the paper for Prof. Kato's class). (Note: 4 different papers are mentioned in this clue.)
5. The week's six papers, in no particular order, were: Petrov's; Stephanie's; the history paper; the one for Prof. Fields' class; the 16-page paper; and the one Sophie typed Saturday.
6. The student who'd written the sociology paper finished it late and begged Sophie to type it quickly; it was typed earlier in the week than Ron's paper, which was typed the day before O'Brian's paper (which wasn't for an economics class).
7. Ursula has never met Prof. Ignazio. Tim, whose paper wasn't typed on Thursday, has never met Prof. Holt (who doesn't teach history).
8. Stephanie isn't taking anthropology this term.
9. Ron doesn't take English literature or psychology.
10. Victor, whose last name isn't Petrov, isn't taking sociology (which isn't taught by Prof. Gupta).

Solution is on page 61.

This problem contains so many variables that a standard chart would not be readable. Instead, please use the space below for solving.

LOGIC PROBLEM CHALLENGER

15. COLOR, BUT NOT COLORIZED

by MARY A. POWELL

Five friends consider themselves an old-movie fan club. They swap tapes they make of late-show classics and spend endless hours debating the fine points of their favorite movies. Last week, not one but two of the local TV stations aired classic-movie series, one of films made between 1930 and 1940 and the other of films made between 1940 and 1950, each showing several films each night. Each of the five fans taped two of the movies; they're planning a marathon showing one Saturday next month. From the following clues, can you give each movie taper's full name, the name, release date, and length (including commercials) of each movie he or she taped, and the night each was recorded?

1. Two movies were taped each night from Sunday through Thursday. No one taped two movies with the same color in the titles. No two movies taped on the same night were the same length, nor did they have the same color in the titles.
2. "The Blue Angel" was released 10 years before "Black Friday," which was released 10 years before "The Black Rose"; these three were all different lengths.
3. "Green Light" was a half-hour longer than "The Green Cockatoo"; those were the only two released the same year; both were taped on nights before "Yellow Jack," which was released the year after.
4. The three 2-1/2 hour movies were released in consecutive years; the three 1-1/2 hour movies were released during the years 1937-1940; of the four 2 hour movies, the last was released in 1944.
5. Richard and Renee were the only two who taped movies on consecutive nights; one of Richard's was released in an odd-numbered year.
6. Fisher taped one on Sunday night and the other on Thursday night; one had "black" in the title, the other had "red."
7. Neither David nor Pritchard taped any movies with "red," "yellow," or "purple" in the title.
8. Neither Michael nor Gold taped anything with "black" or "blue" in the title.
9. On one night, Eleanor and Johnson each taped a movie; on another night, Eleanor and Michael each taped a movie. Michael is not Johnson.
10. "Red River" was released 16 years after "Red Dust"; "Red River" was taped three nights before "Red Dust."
11. "The Purple Heart" was released 5 years before "White Heat"; "The Purple Heart" was taped two nights before "White Heat."
12. The first movie Chandler taped was released 6 years after the second movie Chandler taped; they were taped on consecutive nights.
13. The movies David taped totaled the same number of hours as the movies Michael taped.

Solution is on page 62.

Write the taper's name and information about the films below the tapes as you determine when each was taped.

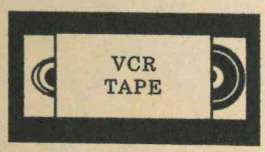
Sunday	Monday	Tuesday	Wednesday	Thursday
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
				
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

FIGURE LOGIC 10
CHALLENGER

by LINDA THISTLE

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Instructions for solving Figure Logics are on page 12.

If you need help starting this puzzle, a starting digit is on page 63.

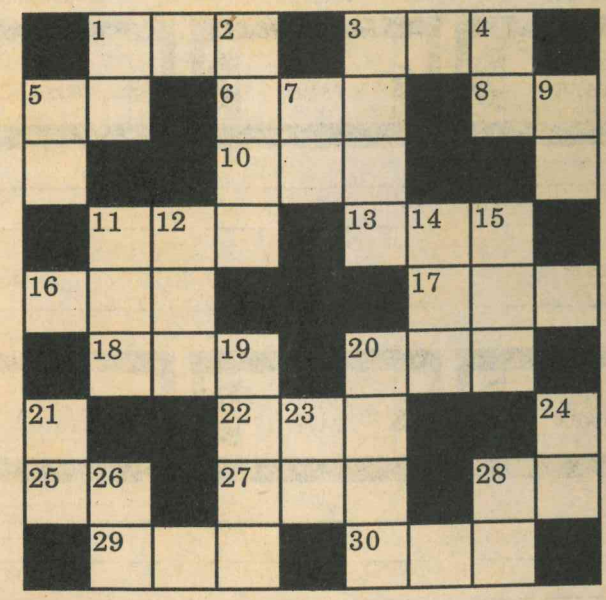
Gina drew the job of counting buttons for the annual storewide inventory. She began with the white plastic buttons, which came in three styles (2-hole fisheye, 4-hole shirt, and shank) and three sizes (3/8", 1/2", and 5/8"). Fortunately, the buttons were sewn to cards, six to a card. Counting cards was easier than counting individual buttons. Gina counted twice as many 5/8" shirt button cards as 1/2" fisheye button cards, twice as many 1/2" fisheye button cards as 3/8" shirt button cards, and three times as many 5/8" fisheye button cards as 3/8" shirt button cards.

ACROSS

1. One more than 1/2" fisheye buttons plus 5/8" fisheye buttons
3. 1/2" fisheye buttons
5. 1/2" shirt button cards
6. 5/8" shirt button cards
8. One less than 5/8" fisheye button cards
10. One more than total fisheye button cards
11. Total shank buttons
13. 5/8" shirt buttons
16. Total shirt button cards
17. 5/8" fisheye buttons
18. One more than 5/8" shirt buttons minus 5/8" shank buttons
20. Total 3/8" button cards minus 5/8" shank button cards
22. 3/8" shank buttons
25. 3/8" shirt button cards
27. Eight less than 5/8" shirt buttons
28. 5/8" shank buttons
29. 3/8" fisheye buttons
30. Total 3/8" buttons

DOWN

1. Total shank button cards
2. Total 1/2" buttons
3. Total buttons
4. Twice 1/2" shank button cards
5. Three more than total shank button cards
7. One less than 5/8" shank button cards
9. 1/2" shank button cards
11. Total button cards
12. Twice total 3/8" button cards
14. Four times total 1/2" button cards
15. Total 5/8" button cards
19. Total fisheye buttons
20. Total 5/8" buttons
21. 5/8" shank button cards
23. 1/2" fisheye button cards
24. 3/8" shank button cards
26. 5/8" fisheye button cards
28. 3/8" fisheye button cards



Solution is on page 58

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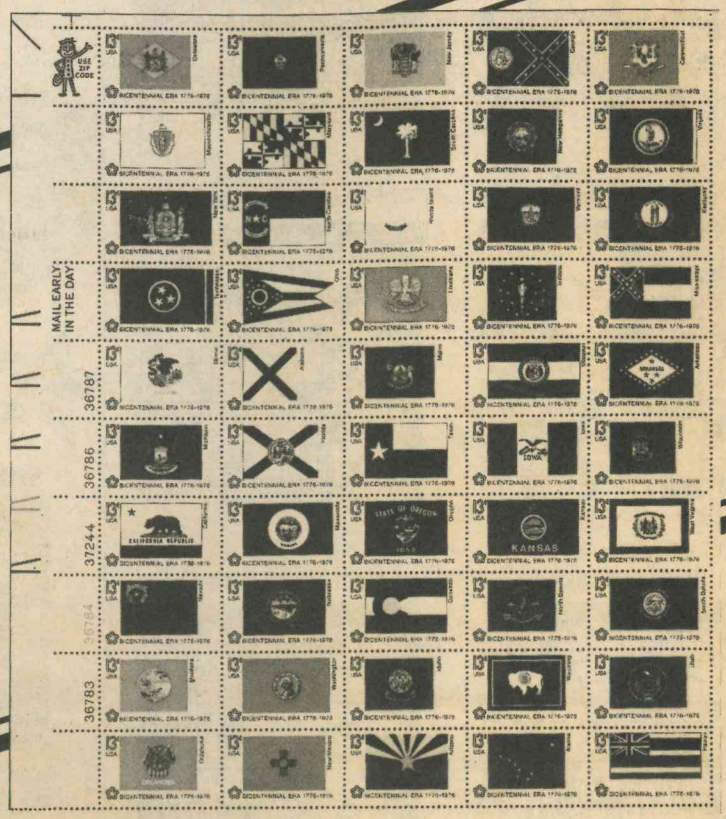

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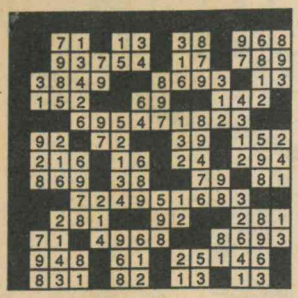

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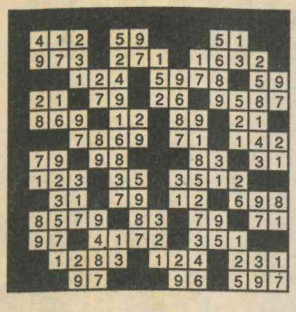

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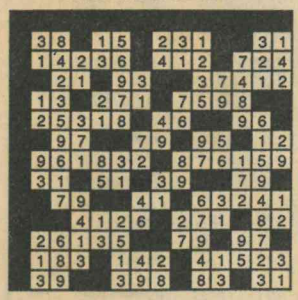

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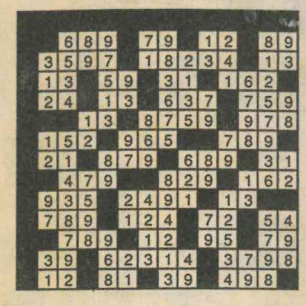

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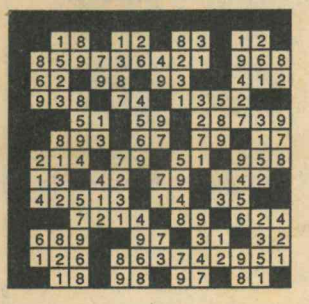
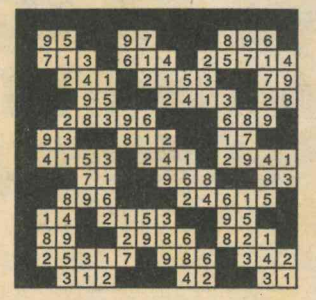


CROSS SUMS 6



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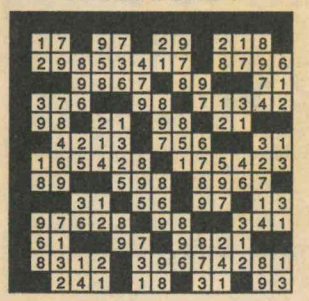

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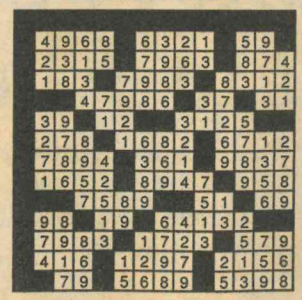
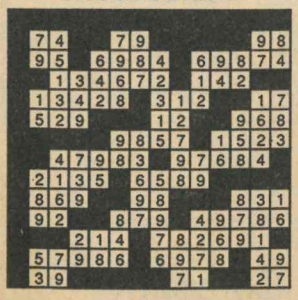
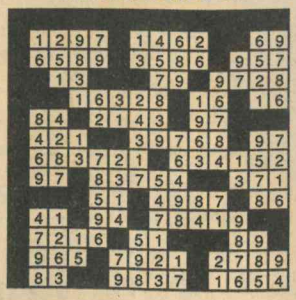


CROSS SUMS 9



CROSS SUMS 10



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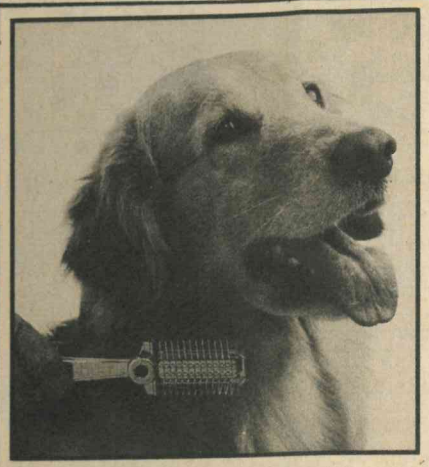

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CROSS SUMS 11

8	4	5	9		4	5		6	2
5	3	1	8	2		3	1	7		9	8	4
7	1		4	1	2	8		6	5	8	1	
9	7	5			3	1	6			3	1	2
	6	1	2	5	4	9			5	2	7	1
		7	9			5	3	9				9	5
1	4	3	8	7	6			1	8	4	2	7	3
3	7			4	2	1				9	5		
	5	4	1	2			5	8	4	7	1	2	
		8	3	6		7	9	1		4	7	8	
	7	9	5	8		4	6	2	1		3	6	
5	1	6		5	6	3		8	6	9	4	7	
3	9				7	9			2	5	1	4	

CROSS SUMS 12

	5	9		7	3	8		7	6
6	8	3		3	2	1	5	9		9	5	1
4	1	2	9	8	5		1	4	8	6	3	2
		1	3	6				6	9	8		
	8	4	7	9		4	9	1	2	3	7	
9	7	5		2	9	1	3			1	5	3
1	2			1	7		8	5			9	7
7	4	9			8	2	1	4		7	8	2
	1	3	6	2	5	4		9	5	6	1	
		5	8	1				7	1	2		
4	2	6	9	3	1		4	8	3	5	2	1
7	6	8		5	7	2	1	6		9	5	3
	1	7			9	5	7			8	7	

CROSS SUMS 13

6	2			1	4	2		7	6
8	4	1		6	3	8	1	9		5	9	2
	9	3	2	8	7		3	2	4	1	6	
		7	5	9		7	5	6	8	2		
	6	2	1		1	3			7	6	4	
9	7	8	3		6	9	8	2		8	9	7
8	4		6	8	4		5	1	3		6	1
6	1	5		5	2	1	7		7	9	8	4
	3	8	6			5	9		2	4	3	
		7	3	8	9	4		4	6	8		
	5	2	1	6	7		7	2	1	5	3	
9	7	1		1	4	3	9	6		7	6	2
5	6				2	1	4				5	4

CROSS SUMS 14

8	1		6	1		1	9	8		9	7	8
9	7	6	8	3		2	7	4	8	6	5	9
3	2	1	9		1	3			9	7		
		2	3	1	4		2	9	7	5	6	8
1	2			3	2	7	1	4		3	8	9
4	1	5	3			9	3	8		1	2	3
	3	1	4	9	8	6	7	5	2			
1	3	2		9	8	6			7	4	6	9
8	9	6		8	7	5	9	6			9	8
4	8	9	7	6	5		8	9	7	6		
	1	2			1	3		8	1	3	2	
5	2	7	1	4	3	6		1	6	2	4	3
9	8	4		3	1	2		3	9		9	8

CROSS SUMS 15

2	9			7	8	9	2			3	6	7
1	6		7	3	6	5	1	2		1	2	4
3	7	8	4	1	2		4	8	3	9		
	1	5			9	7			1	7	9	
		9	8		3	1	4	2		5	8	9
2	4	3	1	6		6	9	8		4	5	8
3	2		3	4	8		2	1	4		7	3
1	8	2			9	6	1		3	1	2	6	4
5	9	7			7	9	3	1		5	6	
	6	3	1				6	4			3	4	
		4	2	1	5		7	5	8	1	2	4
3	2	1		8	6	3	2	1	9		6	5
6	4	5			9	8	3	2			1	7

CROSS SUMS 16

		3	5	8	6	9			1	5		5	1
5	4	2	6	3	8	1		4	8	1	6	3
8	2	1	9	4		9	7		7	5		
9	7	3		9	4	8	1	2		6	9	8
7	1		1	7	2		5	9	7	2	1	3
		5	6	8	9		2	8	1		7	9
	6	4	8					8	4	3		
3	1		2	1	3		4	1	5	2		
1	2	3	9	4	8		7	6	9		1	6
5	4	7		2	5	1	9	3		1	2	7
		4	6		9	7		8	1	2	4	5
9	7	1	3	5		4	5	7	2	8	6	9
5	4		1	7			2	9	4	7	3	

CROSS SUMS 17

7	2		8	4		5	8	6	9		1	8
9	4	8	3	1		3	6	4	8	1	2	5
4	1	6	2			1	9	3		5	7	9
	5	9		8	4	9			1	2	4	
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8	6	9	7		1	2	5	6	7	3		
	4	6	1			1	3	9		8	5	
2	9	8		3	5	7			2	7	1	3
4	5	7	6	2	8	9		4	6	9	3	8
1	3		2	1	3	5		1	7		7	9

CROSS SUMS 18

6	9	5	8		7	9	6		9	4	7	5
4	5	2	9	6	1	7	3		6	1	4	2
2	6	1		8	6		9	4	8	2	6	3
1	3		8	9	5		8	2	3		5	1
9	8	1	3		9	4	7	1		1	8	6
	7	2	4	6	3	1	5		7	8	9	
		3	6	9				1	6	7		
	1	4	9		9	8	3	2	4	5	1	
2	8	7		9	6	2	1		8	9	6	3
1	5		5	7	2		8	4	9		4	2
5	6	4	2	3	1		6	2		5	9	7
7	9	6	3		8	3	9	5	4	2	7	6
4	7	2	1		7	1	2		2	3	8	1

CROSS SUMS 19

8	4		9	7	2		3	9	6		3	4
5	2	7	8	6	1		1	5	2	8	6	9
	1	3		9	4	1	6	8		4	1	
7	9	8	5		7	4	9		1	6	2	3
1	6		3	1	5	2		1	2	9	8	6
3	8	5	1	2		9	7	8	5		5	1
	9	2	4	7		5	2	3	4			
9	5		4	8	9	1		7	6	9	1	4
5	1	4	7	6		9	2	3	4		4	9
7	4	6	9		9	8	4		9	1	2	7
	7	8		5	2	3	1	7		2	3	
8	3	7	4	9	5		6	9	3	8	7	5
5	2		2	6	1		3	5	1		6	2

CROSS SUMS 20

5	1			2	6	8	4	5	7	9		
6	3	1		1	7	9	2	3	4	5	8	
8	6	2	1	5		6	1	4		2	3	7
	8	4	5		7	5			1	2	4	
		8	4		1	3	9	6	8		7	9
	5	9	8	6		1	8	3	4		1	3
5	8	7	6	2	1		6	2	3	7	9	8
4	3		9	4	7	8		1	2	3	5	
3	7		7	1	3	6	5		7	9		
1	2	8				9	3		5	8	7	
2	4	9		5	9	7		2	1	5	3	4
	1	5	6	2	3	4	7	8		6	1	3
		7	8	1	4	2	6	9			2	8

FIGURE LOGIC 1

9	8		9	8	1		7	1
1	4	2	9		9	6	0	4
	2		4	7	6		5	
5	8	8		0		2	6	3
7		8	4		5	6		4
9	5	2		1		6	1	5
	7		8	9	6		1	
3	1	3	6		1	3	7	2
4	2		8	7	6		6	8

FIGURE LOGIC 2

	1	6	5		8	6	9	
1		8	5	1	8	4		5
2	4	2		4		9	4	6
1	1		5	3	9		2	2
	6	0	5		2	4	5	
3	3		1	5	4		9	9
8	5	8		7		4	2	5
5		8	4	2	7	1		7
	2	5	4		7	8	9	

FIGURE LOGIC 3

	9	1		3	2		1	3
	1	1	3	2	8		5	9
2	3	7	8		5	1	2	
4	1			4	6	6	1	
		5	9	3	1	9		
	4	8	4	5			8	7
	3	5	4		8	8	0	9
2	3		9	1	9	1	9	
8	2		2	6		2	9	

FIGURE LOGIC 4

		2	7	9	8	2		
	4	0	5		1	1	6	
6	7	5		8	5	6	9	7
5	3	1		5			5	4
1		9	5	4	6	8		9
7	1			8		8	2	3
8	3	5	2	1		9	1	8
	5	7	8		1	5	3	
		5	9	8	7	6		

FIGURE LOGIC 6

	2	9			4	3	5	
2	1	0		4	2	1	3	5
8	3		3	0	7		7	3
5	7	9	3		5	8		
	5	0				2	2	
		4	5		1	2	1	1
6	1		6	7	5		3	0
5	0	6	2	5		7	9	5
	2	2	5			6	0	

FIGURE LOGIC 7

	1	7	5		1	1	4	
6	0	8	4		2	8	7	3
9	1		6	7	6		3	9
4	4	2		6		1	2	0
		9	9	5	9	0		
6	4	9		4		4	1	6
6	5		3	3	8		5	2
3	2	1	1		4	2	2	5
	2	3	4		5	6	1	

FIGURE LOGIC 8

6	3		1	8	5		4	2
4	2	8	6		3	5	2	8
	1		3	8	2		3	
2	4	1		2		3	1	2
7		2	1		5	6		1
1	4	7		3		1	2	7
	2		2	7	3		1	
6	1	3	5		1	8	4	9
4	3		3	2	6		3	1

FIGURE LOGIC 10

	8	4	1		3	3	6	
9	8		1	1	2		8	3
1			2	1	1			4
	5	2	8		6	7	2	
2	3	8				5	0	4
	6	0	1		1	2	8	
1			2	5	2			4
2	8		6	6	4		7	2
	4	2	0		8	4	0	

NUMBER PLACE 1

9	1	6	4	7	5	8	2	3
4	3	7	1	2	8	6	9	5
2	8	5	6	9	3	1	4	7
3	9	1	8	4	6	5	7	2
6	7	4	3	5	2	9	1	8
8	5	2	7	1	9	3	6	4
1	6	8	2	3	4	7	5	9
5	4	3	9	6	7	2	8	1
7	2	9	5	8	1	4	3	6

NUMBER PLACE 2

5	1	3	2	8	6	4	9	7
4	2	9	1	3	7	5	6	8
6	7	8	9	4	5	3	1	2
9	4	6	5	2	8	7	3	1
1	8	7	4	9	3	2	5	6
3	5	2	6	7	1	9	8	4
7	6	4	3	1	9	8	2	5
2	9	1	8	5	4	6	7	3
8	3	5	7	6	2	1	4	9

NUMBER PLACE 3

2	9	7	5	3	1	6	4	8
5	8	1	7	6	4	2	3	9
4	6	3	9	8	2	7	5	1
3	2	5	4	1	8	9	6	7
1	7	6	2	9	3	4	8	5
8	4	9	6	5	7	3	1	2
9	1	4	3	7	5	8	2	6
6	5	2	8	4	9	1	7	3
7	3	8	1	2	6	5	9	4

NUMBER PLACE 4

9	1	4	2	8	7	5	3	6
7	8	5	1	3	6	9	4	2
2	3	6	9	5	4	8	1	7
4	9	1	8	7	5	6	2	3
8	2	7	6	9	3	4	5	1
6	5	3	4	1	2	7	9	8
5	7	8	3	2	9	1	6	4
3	6	9	7	4	1	2	8	5
1	4	2	5	6	8	3	7	9

NUMBER PLACE 5

6	9	1	3	4	8	5	2	7
8	3	5	6	2	7	9	1	4
7	4	2	5	1	9	8	6	3
9	5	7	8	3	6	1	4	2
2	8	4	7	5	1	6	3	9
1	6	3	2	9	4	7	5	8
5	2	8	9	6	3	4	7	1
3	1	9	4	7	5	2	8	6
4	7	6	1	8	2	3	9	5

NUMBER PLACE 6

4	3	2	1	5	6	8	7	9
9	8	7	3	2	4	1	6	5
5	6	1	7	9	8	4	2	3
7	9	8	2	1	3	5	4	6
3	5	6	8	4	7	9	1	2
1	2	4	9	6	5	7	3	8
8	1	9	4	3	2	6	5	7
2	7	5	6	8	1	3	9	4
6	4	3	5	7	9	2	8	1

NUMBER PLACE 7

9	8	5	3	1	2	4	7	6
1	6	7	4	5	8	2	3	9
3	4	2	6	7	9	1	5	8
5	9	8	7	6	4	3	2	1
2	7	6	1	8	3	9	4	5
4	1	3	2	9	5	6	8	7
8	2	1	5	4	6	7	9	3
7	3	9	8	2	1	5	6	4
6	5	4	9	3	7	8	1	2

NUMBER PLACE 8

8	9	5	7	6	2	1	4	3
6	2	7	4	1	3	9	8	5
3	4	1	9	5	8	6	2	7
2	6	3	8	4	1	5	7	9
1	7	4	3	9	5	8	6	2
9	5	8	2	7	6	4	3	1
5	3	6	1	8	7	2	9	4
4	8	2	5	3	9	7	1	6
7	1	9	6	2	4	3	5	8

NUMBER PLACE 9

9	8	2	7	3	1	4	5	6
5	1	7	8	6	4	9	3	2
3	4	6	9	5	2	8	7	1
1	3	4	2	7	5	6	9	8
2	6	5	1	9	8	3	4	7
7	9	8	3	4	6	1	2	5
4	2	1	5	8	3	7	6	9
6	5	9	4	1	7	2	8	3
8	7	3	6	2	9	5	1	4

NUMBER PLACE 10

1	2	9	7	8	4	6	5	3
7	4	6	1	3	5	2	8	9
8	5	3	6	2	9	1	7	4
6	3	7	4	5	8	9	1	2
4	1	2	9	7	6	5	3	8
9	8	5	2	1	3	4	6	7
3	9	4	8	6	1	7	2	5
2	6	8	5	4	7	3	9	1
5	7	1	3	9	2	8	4	6

NUMBER PLACE 11

2	7	4	1	5	9	3	6	8
1	3	9	7	8	6	5	4	2
6	8	5	3	2	4	1	7	9
4	9	6	5	3	2	7	8	1
8	5	1	4	6	7	9	2	3
3	2	7	8	9	1	6	5	4
9	1	2	6	7	8	4	3	5
7	4	3	2	1	5	8	9	6
5	6	8	9	4	3	2	1	7

NUMBER PLACE 12

6	3	9	7	2	5	1	4	8
7	8	4	1	9	6	5	2	3
1	2	5	4	3	8	6	9	7
4	7	3	5	8	9	2	1	6
2	9	8	6	4	1	7	3	5
5	6	1	2	7	3	9	8	4
3	1	2	8	5	7	4	6	9
9	5	6	3	1	4	8	7	2
8	4	7	9	6	2	3	5	1

THREE-RING CIRCUITS 1

1 (5) 9 (6) (4) 2 = 15
9 (8) 1 (5) 1 (8) = 21
(6) 3 (6) 2 (7) 1 = 19
9 (7) (8) 3 2 (5) = 20
(7) 6 4 (2) (4) 9 = 13
(3) 5 (8) 3 7 (4) = 15
16 20 22 13 15 17

THREE-RING CIRCUITS 2

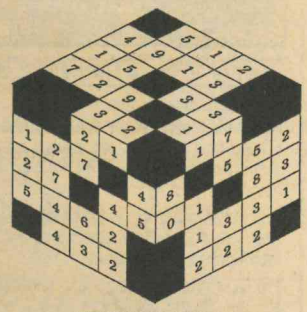
(2) 4 (7) (5) 6 3 = 14
1 (6) (8) 2 2 (5) = 19
9 (7) 4 (8) (7) 9 = 22
9 (2) 9 (6) (4) 1 = 12
(8) 6 (3) 1 8 (7) = 18
(4) 5 1 3 (3) (5) = 12
14 15 18 19 14 17

FIGURE LOGIC 5

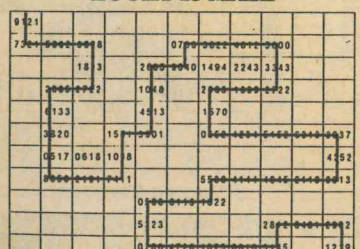
8	3	1			1	2	3	
8	7	2	1		5	7	9	
3	3		5	1	4		6	9
		1	4			7	8	
		2	1	3		1	5	6
8	6	5			7	0	6	
1	7	4	2	4	3		9	5
4	2	2			9	3	6	
			1	1	5		2	1
			2	5			4	8
8	1		5	3	6		2	4
1	0	4	6		3	6	7	
5	8	5			3	5	1	

		7	2	3				
	1	5	4	2				
0	3	9	3		1	3		
			8	7				
			6	9				
6	9			1	6	9		
6	2	5		9	5	0		
		0	8	5	0			
			1	3				
			4	8				
1	1			7		1	1	
2	3	4	3			4	3	2
			4	3	2			

FIGURE LOGIC 9



LUCKY 13 MAZE



BINGO PLAYS 1

	B 1-15	I 16-30	N 31-45	G 46-60	O 61-75	
P	3	18	36	48	74	P
L	10	20	45	50	70	L
A	15	22	FREE	60	63	A
Y	12	26	38	57	72	Y
S	4	17	40	52	69	S
	B	I	N	G	O	

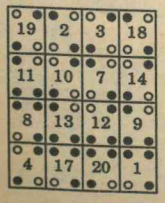
CROSSMATH 1

9	x	9	6	÷	2	4		1	8	1	3	÷	3	7
3	5	9	+	5	5	0		2	x	2	+	8	1	0
−	7	x	3	+	6	0	3	÷	8	+	1	0	0	−
9	−	9		9	+	3	x	4	−	2		4	+	1
÷	8	+	4		8	−	6	+	3		8	−	5	+
4	+	1	1	8		6	÷	2		6	x	1	x	6
2	1	x	2	+	3	2		5	8	x	5	−	4	6
		9	+	6	x			−	8	−	1			
7	2	+	4	−	6	9		4	2	x	2	+	7	6
8	1	9	÷	3		9	+	6		7	+	3	2	9
5	3	−	8		8	÷	2	÷	2		8	x	2	+
2	+	1		8	x	1	+	2	0	1		4	−	3
÷	3	0	2	−	5	x	2	+	1	x	2	−	2	+
2	0	0	x	4	−	3		6	÷	6	+	5	0	1
6	2	x	9	÷	1	8		6	3	x	4	÷	1	8

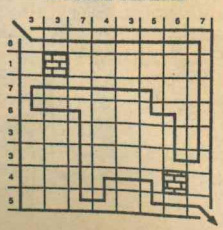
CROSSMATH 2

	9	x	9	÷	8	1		2	9	5	÷	5	9	
1	+	4	x	3	−	5		1	+	7	2	x	2	1
9	6	÷	8	−	5	+		+	7	+	4	1	−	1
2	4	2	+	2		5	−	3		7	x	4	8	x
÷	6	+	4		9	+	3	÷	2		2	+	5	1
6	÷	2		5	x	4	x	4	x	7		6	x	1
4	5	x	5	9	8		6	−	4	x	7	+	8	0
		−	8	+	1		6	x	6	+				
2	7	÷	3	+	8	1	8		6	−	4	x	2	4
6	+	2		7	+	1	x	6	÷	3		7	+	2
4	5	+	2		2	x	2	0	3		9	−	7	+
÷	4	2	x	7		4	x	8		8	x	3	÷	6
2	+	2	2	+	4	÷		+	1	x	3	x	9	+
4	4	+	1	1	x	1		1	+	2	0	2	−	7
	5	8	+	4	8	2		6	2	x	3	1	1	

SUMSPOTS



MATH MAZE



BINGO PLAYS 2

	B 1-15	I 16-30	N 31-45	G 46-60	O 61-75	
P	8	20	45	49	65	P
L	9	27	37	60	66	L
A	5	29	FREE	52	72	A
Y	2	17	42	50	69	Y
S	1	24	36	47	74	S
	B	I	N	G	O	

MAGIC NUMBER SQUARES

1.

158	198	166	254
238	182	214	142
246	174	206	150
134	222	190	230

2.

183	203	209	181
197	193	187	199
189	201	195	191
207	179	185	205

3.

220	184	200	172
164	208	192	212
176	196	180	224
216	188	204	168

LOGIC PROBLEM 1

The Shaker chair was not bought by Justin (clue 1), Rachel (clue 3), or Claire (clue 7); Nathan bought the Shaker chair. Nathan did not buy at House (clue 1), Meadowlane (clue 2), or Beginnings (clue 3); he bought at Wood. Justin didn't shop at House (clue 1) or Beginnings (clue 3); he bought at Meadowlane. Hudson is not Nathan or Justin (clue 2), or Claire (clue 5); she is Rachel. The bent-twig chair wasn't bought by Claire or Rachel (clue 5); Justin bought the bent-twig chair. The Adirondack chair was not from House (clue 4); it was from Beginnings and the English chair was from House. Claire did not shop at Beginnings (clue 7); she bought at House and Rachel bought at Beginnings. Ladd is neither Claire nor Nathan (clue 4); he is Justin. Claire is not Cooper (clue 6); she is Shaw and Nathan is Cooper. In sum:

Claire Shaw, English country, House Fair
Justin Ladd, bent-twig, Meadowlane
Nathan Cooper, Shaker, Wood Shoppe
Rachel Hudson, Adirondack, Beginnings

LOGIC PROBLEM 2

The two from Wales were last to arrive (clue 1), so George, who arrived before the man from Ireland and after the one from Cornwall (clue 2) was from Scotland. George panned 8 ounces (also clue 2), so by clue 3, Welshman Cyril panned 4 oz. and Welshman Berry 2 oz. By clue 4, Tom Jones worked at the North Star and panned 5 oz.; he was not from Cornwall, so he was from Ireland. Mr. Haven worked at Champion and panned 3 oz. (clue 5), by elimination, he was from Cornwall. He was not Fred, who worked at Central (clue 6); Haven was Bob, and Fred was Berry. By clue 7, George, who panned 8 oz., was Gates, while Cyril, who panned 4 oz., worked at Lost Hill. By elimination, Cyril was Jackson and George Gates worked at Empire. In sum:

Fred Berry, Wales, Central, 2 oz.
George Gates, Scotland, Empire, 8 oz.
Bob Haven, Cornwall, Champion, 3 oz.
Cyril Jackson, Wales, Lost Hill, 4 oz.
Tom Jones, Ireland, North Star, 5 oz.

LOGIC PROBLEM 3

The two with the same name who do the same job (clue 3) are not named Rojas (clue 1), Thompson (clue 2), Evans (clue 5), or Brown (clue 6); Mr. and Ms. Johnson do the same job. Their job is not bookkeeper or machine operator (clue 1), word processor (clue 4), or secretary (clue 5); it is quality-control clerk. Mr. Rojas is a bookkeeper and Ms. Rojas a machine operator (clue 1). Mr. Evans is a secretary (clue 5). The female secretary is not Ms. Thompson (clue 2) or Ms. Evans (clue 5); she is Ms. Brown, and Mr. Brown is a word processor (clue 6). By elimination, Mr. Thompson is the male machine operator; Ms. Thompson, then, is a word processor (clue 4). By elimination, Ms. Evans is the female bookkeeper. In sum:

bookkeeper: Ms. Evans, Mr. Rojas
machine operator: Ms. Rojas, Mr. Thompson
quality-control clerk: Ms. Johnson, Mr. Johnson
secretary: Ms. Brown, Mr. Evans
word processor: Ms. Thompson, Mr. Brown

LOGIC PROBLEM 4

The 17-year-old is not Nina (clue 1), Jasmine (clue 2), Maureen (clue 3), or Laura (clue 4); she is Kathy. The 13-year-old is not Nina (clue 1), Jasmine (clue 2), or Maureen (clue 3); she is Laura, and the fast-food worker is 15 (clue 4). Kathy is not Osmond (clue 1), Perez (clue 2), Spinelli (clue 3), or Reynolds (clue 4); she is Quigley. The record-store worker is 16 (clue 5); she is not Osmond (clue 1), Perez (clue 2), or Spinelli (clue 3), so she is Reynolds, and Kathy Quigley is saving for a stereo (clue 4). By clue 1, the grocery-store worker is 14, and Nina is 16. The 14-year-old is not saving for a phone (clue 1), jacket (clue 2), or car (clue 3); she is saving for a TV. Laura is not saving for a jacket (clue 2) or car (clue 3); she is saving for a phone. By clue 1, then, the Osmond girl is 15. Maureen is neither Perez (clue 2) nor Spinelli (clue 3), so she is Osmond; by elimination, Jasmine is 14. Laura is Perez (clue 2); by elimination, Jasmine is Spinelli. Nina Reynolds is saving for a car (clue 3); by elimination, Maureen Osmond is saving for a jacket. Kathy Quigley is not the babysitter (clue 1), so Laura Perez is, and Kathy Quigley works at the ice-cream parlor. In sum:

Kathy Quigley, 17, ice-cream parlor, stereo
Nina Reynolds, 16, record store, car
Maureen Osmond, 15, fast-food restaurant, jacket
Jasmine Spinelli, 14, grocery store, TV
Laura Perez, 13, babysitting, phone

LOGIC PROBLEM 5

Of the four owners, at least three had tenants (clue 1). By clue 8, Ms. Morse did not, so Louise, who bought the building from Morse, built and rented out the apartment, and the owners in order are: Morse, Louise, Ms. Perkins, and Josie. Landlord Gail had tenants (clue 3), so is not Morse; she is Perkins and had two tenants: Mr. Dean and the sculptor. Landlord Freeman is not Louise (also clue 3), so she is Josie; she also had two tenants: Edward and Mr. Karp. By elimination, Morse is Winnie and Louise is Appleton; since Winnie Morse had no tenants, Louise Appleton also had two tenants. Mr. Harris and Mr. Brown are the two writer tenants (clue 4), so one is poet Don (clue 6) and the other is the novelist. Don, then, is not any of Gail Perkins' or Josie Freeman's tenants (clue 3); he is one of Louise Appleton's tenants. We already know Appleton was the first landlord to have tenants. Don was not the first tenant (clue 6), so Don was Appleton's second tenant. By clue 1, then, Mr. Clark was Louise Appleton's first tenant, Max is either Mr. Dean or the sculptor, and the pianist is either Edward or Karp. Since Brown was not the first tenant, second-tenant Don is Brown, while Harris, who is therefore the novelist, was a later tenant (clue 4); Harris is Josie Freeman's tenant Edward. The pianist, then, is Karp (clue 1); he is Phil (clue 7). The sculptor was one of Gail Perkins' tenants, so the painter was not (clue 5); the painter is Louise Appleton's tenant Clark. By elimination, Gail Perkins' tenant Dean is the violinist, and the sculptor is Mr. Warner. Robert is neither painter Clark nor violinist Dean (clue 2); he is sculptor Warner, and Max is Dean (clue 1). By elimination, Clark is Samuel. In sum:

OWNER	TENANTS
Winnie Morse	none
Louise Appleton	Samuel Clark, painter
	Don Brown, poet
Gail Perkins	Max Dean, violinist
	Robert Warner, sculptor
Josie Freeman	Edward Harris, novelist
	Phil Karp, pianist

LOGIC PROBLEM 6

The two curly wigs are Gretchen's and the red wig (clue 1), which is long and belongs to Elaine (clue 3); Elaine, then, is Ms. Gold (clue 2). Ms. Green has red hair (clue 3). Gretchen's curly wig is brown (clue 6). Anna's wig is straight, so Ms. White is curly-wig owner Gretchen (clue 7). Gretchen White's wig is brown, so Anna's is not (also clue 7). Nor is Wanda's (clue 4); Diane bought a brown wig, which is long (clue 2), so Gretchen White's brown wig is short (clue 6) and Anna's wig is long (clue 7) and blonde (clue 2). By elimination, Wanda's wig is short and black. Neither Diane nor Wanda is Ms. Silver (clue 4); Anna is. Anna Silver's hair is not brown (also clue 4), so Ms. Green is not brown-wig buyer Diane (clue 3); Ms. Green is Wanda, and Anna's hair is black like Wanda's wig. By elimination, Diane is Ms. Gray. Diane Gray bought a brown wig, so does not have brown hair (clue 5); Elaine Gold and Gretchen White (who bought a brown wig) have brown hair, and Diane Gray, by elimination, has blonde hair. In sum:

Elaine Gold: brown hair, red long curly wig
Diane Gray: blonde hair, brown long straight wig
Wanda Green: red hair, black short straight wig
Anna Silver: black hair, blonde long straight wig
Gretchen White: brown hair, brown short curly wig

LOGIC PROBLEM 7

Ryan was just ahead of one of the Shapiro boys (clue 3), so he is not a Shapiro boy (clue 1); the other two boys, Andrew and Jason, then, are both named Shapiro. Ryan has one sister (clue 6), and there are two Delgado girls (clue 9), so Ryan and his sister are not named Delgado; they are the Martin twins. The Shapiro boy behind Ryan was ahead of the dragon (clue 3). Jason was ahead of the girl on the horse (clue 8), so the Shapiro boy behind Ryan was Andrew, who had a blue balloon (clue 7). The dragon behind him was not ridden by his brother (clue 1); a girl rode the dragon. Girls also rode the horse (clue 8) and giraffe (clue 9), so boys rode the lion, swan, and tiger. Elizabeth was behind the boy on the tiger (clue 2) and Sharon was behind the boy on the lion (clue 5), so Ryan, who had Andrew behind him, rode the swan and carried the orange balloon (clue 4). A boy held the green balloon (clue 6); by elimination he is Jason Shapiro, and girls held pink, purple, and yellow balloons. The girl with the purple balloon who sat behind Elizabeth (clue 2) is not Sharon, who sat behind the boy on the lion (clue 5); Patsy held the purple balloon and sat behind Elizabeth, who is Ryan Martin's sister, and ahead of Jason (clue 6); Patsy and Sharon are the Delgado girls. The girl on the horse behind Jason (clue 8), then, is Sharon, and Jason rode the lion (clue 5). The boy on the tiger in front of Elizabeth (clue 2), by elimination, is Andrew; Elizabeth rode the dragon (clue 3). By elimination, Patsy Delgado rode the giraffe; her sister Sharon didn't have the yellow balloon (clue 9), so Sharon had the pink balloon and Elizabeth Martin had the yellow. In sum:

Ryan Martin, swan, orange balloon
Andrew Shapiro, tiger, blue balloon
Elizabeth Martin, dragon, yellow balloon
Patsy Delgado, giraffe, purple balloon
Jason Shapiro, lion, green balloon
Sharon Delgado, horse, pink balloon

LOGIC PROBLEM 8

The longest quest was not by Clyde (clue 2), Ariel (clue 7), or Ezra (clue 8). The one on the longest quest was not helped by the giant (clue 3), fortune teller (clue 7), or gnome (clue 8); he or she was helped by either the dwarf or the sorceress, neither of whom helped Bjorn (clue 5). Bjorn, then, did not make the 5-1/2-year quest; Delilah did. She did not seek the scroll (clue 1), potion (clue 4), quiver (clue 6), or sword (clue 9); she sought the chariot. She was not helped by the dwarf (clue 2); she was helped by the sorceress. The 4-year quest was not Clyde's (clue 2), Ariel's (clue 7), or Ezra's (clue 8); it was Bjorn's. He wasn't helped by the giant (clue 3), dwarf (clue 5), or fortune teller (clue 7); the gnome helped him. Bjorn did not seek the scroll (clue 1), so Ariel did not make the 3-year quest (clue 7). Nor did Clyde (clue 2); Ezra did. Neither Bjorn nor Ezra sought the quiver (clue 6). By clue 3, then, the quiver was the 28-month quest, and the giant helped the 16-month quester, who did not seek the sword, or the scroll (clue 7); he or she sought the potion. Ariel did not seek the potion (clue 4); Clyde did, and Ariel made the 28-month quest for the quiver. Ariel was not helped by the fortune teller (clue 7), so Ariel was helped by the dwarf, Ezra by the fortune teller. Bjorn did not seek the scroll (clue 1), so Ezra did, and Bjorn sought the sword. In sum:

Ariel, golden quiver, dwarf, 28 mos.
Bjorn, jeweled sword, gnome, 4 yrs.
Clyde, magic potion, gentle giant, 16 mos.
Delilah, silver chariot, sorceress, 5-1/2 yrs.
Ezra, ancient scroll, fortune teller, 3 yrs.

LOGIC PROBLEM 9

The tallest player is the center (clue 1), who is not from Polytechnic (clue 5), Our Lady of Sorrows (clue 7), Summerset Twp. (clue 8), or Wild Lake (clue 10); she is from Central City. She is 10" taller than the shortest (clue 1), so Bird, who plays forward, is 9" taller than the shortest (clue 4). Shelley is a guard (clue 7) so is not one of the two tallest; she and the 3"-shorter OLS recruit are among the three shortest. By clue 5, Keri, the 2"-shorter Ewing, and the 6"-shorter Polytechnic recruit are not the three shortest; Keri is either the center from Central City or forward Bird. If Keri were the center, the five heights would be (compared to the shortest): 10" taller, 9" taller, 8" taller, 4" taller, and the shortest, leaving no 3" interval for Shelley and the OLS recruit. So Keri is forward Bird, Ewing is 7" taller than the shortest, and the Polytechnic recruit is 3" taller than the shortest. Keri Bird is not from Summerset Twp. (clue 6), so she is from Wild Lake. Shelley is not the center, so Ewing is not from OLS (clue 7); Ewing is from Summerset. By elimination, the shortest player is from OLS; again by clue 7, Shelley is from Polytechnic. By clue 8, Didi plays center. Hannah is not Ewing (clue 6); Allison is, and Hannah is the shortest player from OLS. Allison isn't a guard (clue 3); she plays forward, and Hannah plays guard. Hannah is not Robinson or Wilkins (clue 2), so she is Jordan. Didi is not Robinson (clue 8), so she is Wilkins; Shelley, by elimination, is Robinson. Hannah Jordan is 5'4" (clue 9), so Shelley Robinson is 5'7", Allison Ewing 5'11", Keri Bird 6'1", and Didi Wilkins 6'2". In sum:

6'2" Didi Wilkins, center, Central City
6'1" Keri Bird, forward, Wild Lake
5'11" Allison Ewing, forward, Summerset
5'7" Shelley Robinson, guard, Polytechnic
5'4" Hannah Jordan, guard, Our Lady of Sorrows

LOGIC PROBLEM 10

Six travelers are female, four male. Six destinations appear in the clues, so the groups are: a man and a woman going to New York City on their honeymoon (clue 1); girls Sandy and Mandy and a parent (clue 2); Mr. Martin and Peter, each of whom is alone (also clue 2); two adult sisters (clue 7), and, by elimination, a third person alone. By clue 4, the woman going to college is one of the adult sisters; they are going to Pittsburgh (clue 3). More than one person is going home (clue 7); Sandy, Mandy, and parent are. One man is moving (clue 5), another going on business (clue 8). By elimination, the third lone traveler is going on vacation; he is Jake, who had seat 1C (clue 3). The lone travelers were men; Sandy and Mandy's parent is their mother. Since Sandy, Mandy, and their mother sat together, they sat in row 2. Martha, Mrs. Turner, and Laura Vine sat together (clue 1) in row 2; either Laura Vine or Mrs. Turner is the twins' mother. Five women sat in row 2; only one sat in row 1, with all four men. The woman in row 1 was with a man on her honeymoon to NYC. The sisters going to college sat in row 2; both are unmarried (clue 7), so Mrs. Turner is the twins' mother, while Martha and Laura Vine are sisters. Since Martha sat directly beside Mrs. Turner, Mrs. Turner sat in 2C. By clue 4, Jerry sat in either 1B or 1D, the woman going on her honeymoon in either 1A or 1E, and they are the Douglases, while Jake is going to Miami. Men are going to Los Angeles (clue 2) and Denver (clue 5). Mrs. Turner, then, is going to Kansas City and so is not Florence (clue 6); she is Janet. The three single men are Mr. Martin, Mr. Goldblum, and Mr. Morrison; Jake is not Martin (clue 2) or Goldblum (clue 3); he is Morrison. The man going on business sat in 1D (clue 8); Mrs. Douglas, who by elimination is Florence, sat in 1A, Jerry Douglas in 1B. By clue 2, Sandy and Mandy sat, in some order, in 2D and 2E; Martha sat in 2B and Laura in 2A (clue 1). The man who is moving is not going to Denver (clue 5); the man who is going on business is, while the man who is moving is going to Los Angeles (clue 2), and sat in 1E. By clue 2, Peter was moving to LA, and Mr. Martin was going to Denver on business. By elimination, Mr. Martin is George, while Peter is Goldblum. By clue 2, Sandy sat in 2D and Mandy in 2E. In sum:

1A: Florence Douglas, NYC, honeymoon
1B: Jerry Douglas, NYC, honeymoon
1C: Jake Morrison, Miami, vacation
1D: George Martin, Denver, business
1E: Peter Goldblum, Los Angeles, moving
2A: Laura Vine, Pittsburgh, college
2B: Martha Vine, Pittsburgh, college
2C: Janet Turner, Kansas City, home town
2D: Sandy Turner, Kansas City, home town
2E: Mandy Turner, Kansas City, home town

LOGIC PROBLEM 11

Clues 3 and 4 together list four projects completed consecutively: the one on Cherry, project C, the one by the hospital, and the stoplight; these four were done Monday, Tuesday, Wednesday, and Thursday, or Tuesday, Wednesday, Thursday, and Friday. Clue 2 lists three projects done consecutively: the one on Oak, the flashing light, and the one by the library. Those three can overlap with the projects from clues 3 and 4 in only two ways — the project on Oak was either the day before or the day after the one on Cherry. Since the project on Oak was not done Tuesday (clue 6), in either case, the project on Cherry was not done Monday. So the project on Cherry was Tuesday, project C Wednesday, the one by the hospital Thursday, and the stoplight Friday. By clue 6, project B was Monday and the one on Oak was project C on Wednesday; the flashing light was put by the hospital Thursday and the one by the library was Friday's stoplight (clue 2). By clue 7, then, the yield sign was Wednesday and project E was Tuesday. The crosswalk was project A, B, or C (clue 1) so it was not E Tuesday; it was project B Monday and, by elimination, Tuesday's project was the stop sign. Also by clue 1, project C — the yield sign on Oak — was by the bank, and the one on Elm was A. The one by the post office wasn't E (clue 7), so it was project B and was done Monday. The one on Maple, then, was done Friday (clue 5). By elimination, project A on Elm was done Thursday, Friday's project on Maple was D, and Tuesday's project E was by the school. In sum:

Mon.: crosswalk, Apple, post office, B
Tues.: stop sign, Cherry, school, E
Wed.: yield sign, Oak, bank, C
Thurs.: flashing light, Elm, hospital, A
Fri.: stoplight, Maple, library, D

LOGIC PROBLEM 12

Matt took Bach (clue 1), so Andrew Hines (clue 7) and Scott, in some order, took Chopin (clue 9) and Beethoven (clue 15). Beth, who took "Going My Way" and did not go Saturday (clue 2), did not take Vivaldi (clue 1) or Strauss (clue 12); she took Mozart and is DeCoeur (clue 10). Lucy went Thursday (clue 6). She did not take Vivaldi (clue 1); she took Strauss and "Casablanca" (clue 12). By elimination, Georgia took Vivaldi and went Saturday (clue 1). Scott took the science-fiction book but not the Degas print (clue 11), so he is not Burrows (clue 3), nor Ortega (clue 2) or Rosenbaum (clue 5); he is Sullivan and took "Ben-Hur" (clue 14). Georgia did not take "Gone With the Wind" (clue 6) or "African Queen" (clue 9); she took "Rear Window" and a biography (clue 4). She took Monet and is not Burrows (clue 3) or Rosenbaum (clue 5); she is Ortega. Lucy went Thursday and Georgia Saturday, so the men who took "African Queen" and Chopin came Monday and Tuesday or Tuesday and Wednesday (clue 9). Either way, Beth DeCoeur who took "Going" did not come Tuesday, nor Wednesday (clue 6) or Friday (clue 10); she came Monday and took a history (clue 13). She did not take Degas (clue 3), Renoir (clue 8), Chagall (clue 13), or Wyeth (clue 15); she took Picasso. Scott Sullivan who took "Ben-Hur" did not go Tuesday (clue 9) or Wednesday (clue 6); he went Friday. He did not take Bach (clue 1) or Chopin (clue 9); he took Beethoven and Wyeth (clue 15). Andrew Hines, by elimination, took Chopin, Wednesday (clue 9), along with "GWTW" (clue 6), while Matt took "African" Tuesday (clue 9) and Chagall (clue 13). He is not Burrows (clue 3); he is Rosenbaum and took mystery (clue 5), while Lucy, by elimination, is Burrows and took Degas. Andrew, then, took Renoir and fiction (clue 8) and Lucy took short stories. In sum:

Mon.: Beth DeCoeur: history, Mozart, "Going My Way," Picasso
Tues.: Matt Rosenbaum: mystery, Bach, "African Queen," Chagall
Wed.: Andrew Hines: fiction, Chopin, "Gone With the Wind," Renoir
Thurs.: Lucy Burrows: short story, Strauss, "Casablanca," Degas
Fri.: Scott Sullivan: science-fiction, Beethoven, "Ben-Hur," Wyeth
Sat.: Georgia Ortega: biography, Vivaldi, "Rear Window," Monet

LOGIC PROBLEM 13

Clue 1 lists all five cars. By clue 5, each car's total cost (base price plus all options) is $10,000. By clue 10, then, the model 40M's base price is $9,000, and the options total $1,000. By clue 7, the Dilton's base price is $9,100 including the radio. By clue 3, the lowest base-priced car is $400 less than the highest; by clue 2, then, the Erdman has the lowest base-price, while the model SSS has the highest. The SSS includes the automatic (clue 2); by clue 9, then, the Dilton is not the SSS. The SSS, then, costs at least $9,200, while the Erdman costs at least $8,800. One car's air conditioning costs $400 (clue 8), while another's costs $500 (clue 1). By clue 3, then, the air-conditioning option costs at least $100 and at most $800, with no more than $400 difference between the least and most expensive. The automatic option has the same range, and no car's air conditioning costs the same as its automatic (clue 6). The Dilton's two options, air conditioning and automatic, cost a total of $900; either one costs $500 and the other $400, or one $600 and the other $300. By clue 8, the Arden's air conditioning costs $100 or $300, the 345's $200 or $600, while the car with $400 air conditioning's automatic costs $200, $600, or $800, and the 345's automatic $100, $300, or $400. The Dilton, then, does not have $400 air conditioning and $500 automatic. If it had $500 air and $400 automatic, it would not be the 345; it would be the VFC. The Bostick would have $400 air (clue 6). The 345 with either $200 or $600 air would not be the Corson (clue 4), Bostick or Arden (clue 8); it would be the Erdman. By clue 1, then, that would have a $300 radio. The Corson would not have $500 air (clue 4); it would be the A1A. This, however, would leave no place for the Bostick with $400 air. The Dilton, then, does not have $500 air; its air and automatic cost $300 and $600 in some order. By clue 3, then, air and automatic each cost at least $200 and at most $700; the Arden's air does not cost $100, so it costs $300 and the 345's costs $600; the car with $400 air's automatic does not cost $800, nor does the 345's automatic cost $100, so the 345's automatic costs $300 and one car has $400 air and $600 automatic (clue 8). Since no two cars have the same automatic cost (clue 6), the Dilton is the 345. If the car with the $300 radio had $400 air and $600 automatic, the total option cost would be $1,300, for a base price of $8,700 (clue 5). However, the lowest base-priced car is at least $8,800; the A1A, then, has $400 air and $600 automatic. Since exactly one car includes each option (clue 9), the car with the $300 radio mentioned in clue 1 includes air in the base price. By clue 4, that is the Corson, which has a $9,200 base price. Its two options then total $800 (clue 5); its automatic costs $500. By clue 6, the Bostick has $500 air, while the VFC is the Corson. By elimination, the A1A is the Erdman. The SSS, then, costs at least $9,300; by clue 2, the Erdman costs $8,900, and the SSS $9,300. By clue 5, the radio in the Erdman A1A costs $100. The SSS options cost a total of $700 for air and radio (clue 2), while the 40M options cost a total of $1,000 for all three options (clue 9). By clue 6, then, the automatic for the 40M costs $400. Since two cars have $300 radios (clue 1), one has radio included, and one has $100 radio, the fifth has a $200 radio (clue 3). The 40M and SSS have $200 and $300 radios, in some order. The SSS, then, has $500 air and $200 radio and is the Bostick, while the 40M has $300 air, $400 automatic, and $300 radio, and is the Arden. In sum:

make	model	base	trans.	AC	AM/FM	total
Arden	40M	9,000	400	300	300	$10,000.
Bostick	SSS	9,300	—	500	200	$10,000.
Corson	VFC	9,200	500	—	300	$10,000.
Dilton	345	9,100	300	600	—	$10,000.
Erdman	A1A	8,900	600	400	100	$10,000.

LOGIC PROBLEM 14

Monday's paper was not written by Ursula (clue 2), Tim (clue 3), Wendy (clue 4), or Ron (clue 6); it was by Stephanie or Victor. If it had been Victor's, Tuesday's paper would have been for Prof. Holt's class (clue 1). Victor's last name would not be Natsumi (clue 1), Munoz (clue 2), Quigley (clue 3), O'Brian (clue 6), or Petrov (clue 10); he would be Lang. His course would not have been sociology (clue 4), so Tuesday's student would not have been Ron (clue 6) or Tim (clue 7); a woman would have written Tuesday's paper. Victor's course, then, would not have been anthropology (clue 2), nor economics (clue 1), literature (clue 3), or psychology (clue 4); it would have been history. Victor's professor would not have been Gupta (clue 2), Ignazio (clue 3), Kato (clue 4), or Fields (clue 5); it would have been Jordan. Saturday's professor would not have been Gupta (clue 2), Kato (clue 4), or Fields (clue 5); it would have been Ignazio. Saturday's student would not have been Tim (clue 3), Stephanie (clue 5), Ron (clue 6), or Ursula (clue 7); it would have been Wendy. Her last name would not be Natsumi (clue 1), Munoz (clue 2), Quigley (clue 3), or Petrov (clue 5); it would be O'Brian. Her course would not have been anthropology (clue 2), literature (clue 3), sociology or economics (clue 6); it would have been psychology. This, however, would contradict clue 4; Victor, therefore, was not Monday's student, so Stephanie was. Her course was not economics (clue 1), literature (clue 3), psychology (clue 4), history (clue 5), or anthropology (clue 8); it was sociology. Her last name is not Munoz (clue 2), Quigley (clue 3), Lang (clue 4), Petrov (clue 5), or O'Brian (clue 6); it is Natsumi. The economics paper was typed on Tuesday (clue 1). Saturday's student was not Munoz (clue 2), Lang (clue 4), or Petrov (clue 5), it was either Quigley or O'Brian. If it had been O'Brian, Ron's paper would have been typed Friday (clue 6). His course would not have been anthropology (clue 2), literature or psychology (clue 9); it would have been history. His professor would not have been Holt (clue 7), so Victor's paper would not have been typed Thursday (clue 1). Tim's paper was not typed Thursday (clue 7), so a woman's would have been. By clue 2, then, Mr. Munoz's paper would have been typed Friday, and he would be Ron, while the anthropology paper would have been typed Thursday, the shortest paper would have been O'Brian's on Saturday. Since Gupta was not Stephanie's sociology professor (clue 10), he would have been Tuesday's professor, while Ursula's paper would have been typed Wednesday (clue 2). By elimination, Wendy would have been the woman whose paper was typed Thursday. However, this would leave no day for Victor's paper to be typed (clue 1); O'Brian, then, was not Saturday's student, so Quigley was. Quigley is not Victor (clue 1), Tim (clue 3), or Ron (clue 6); she is either Ursula or Wendy. Quigley did not write the shortest paper (clue 3) so, by clue 2, the anthropology paper was typed Wednesday, Mr. Munoz's paper Thursday, and the shortest paper Friday. Gupta does not teach sociology (clue 10), so the paper for his class was typed Tuesday, while Ursula is Quigley (clue 2). Ursula Quigley's class was not literature (clue 3) or history (clue 5); it was psychology. By clue 4, Wendy's paper was typed Wednesday and Lang's Tuesday. Tim's paper was not Friday's shortest paper (clue 3), nor was it Thursday's (clue 7); his paper was typed Tuesday, and he is Lang. By clue 5, then, his paper was 16 pages. A man's paper was 25 pages (introduction); that was the one typed Thursday for Mr. Munoz. By clue 6, Ron is Munoz, while O'Brian's paper was typed Friday. By elimination, O'Brian is Victor and Wendy is Petrov. Ron did not take literature (clue 9); he took history, while Victor took literature. Victor's paper was 15 pages (clue 3). Prof. Holt taught Quigley's psychology course (clue 1). By clue 5, Victor's professor was Fields. Ursula Quigley's paper was longer than Stephanie Natsumi's, which was longer than the one for Prof. Ignazio's course (clue 3). Ursula's paper was shorter than the one for Prof. Kato's course (clue 4). Stephanie, then, had neither Ignazio nor Kato; she had Jordan. Wendy did not have Kato (clue 4); she had Ignazio and, by elimination, Ron had Kato. By clue 4, then, Ursula's paper was 24 pages; by clue 3, Stephanie's was 22 and Wendy's was 20. In sum:

Mon.: Stephanie Natsumi, sociology, Jordan, 22
Tues.: Tim Lang, economics, Gupta, 16
Wed.: Wendy Petrov, anthropology, Ignazio, 20
Thurs.: Ron Munoz, history, Kato, 25
Fri.: Victor O'Brian, literature, Fields, 15
Sat.: Ursula Quigley, psychology, Holt, 24

THEY KEEP GOING...

4 hours. Every hour, Paul goes 3 miles one way and Bob goes 6 miles the opposite way, so every hour they get 9 miles farther apart, and after 4 hours they will be 36 miles apart.

...AND GOING

12 hours. Since they are going in the same direction, Bob gets 3 miles ahead of Paul every hour, or 36 miles after 12 hours.

FENCING LESSONS

The longer side that does not contain the gate uses 24 feet more fence than a shorter side, while the side with the 4-foot gate uses 20 feet more. Subtracting the 44 extra feet from the 300 feet of fence leaves 256 feet to be divided into four equal sides, each the length of the short sides. So the short sides are 64 feet, and the longer sides (one including the 4-foot gate) are 88 feet.

TRIGONS HELP

For puzzle 1, look at the triangle to the lower left with 4 as its sum, bordered by triangles with sums 9, 11, and 8. The smallest number in a combination adding to 9 is 1 and the smallest number in a combination adding to 11 is 3, so the combination for that 4 is 0-1-3. Looking at the combinations for 9, 11, and 8 will tell you which combinations belong in the adjoining triangles.

LOGIC PROBLEM 15

From the introduction and clue 2, "Blue Angel" was released in 1930, "Black Friday" in 1940, and "Black Rose" in 1950. By clue 4, there were three 1-1/2 hour movies dated 1937-40, four 2 hr. movies dated 1944 and earlier, and three 2-1/2 hr. movies, dated 1948, 49, and 50; "Black Rose" ran 2-1/2 hrs. "Blue Angel" ran 2 hrs. and "Black Friday" 1-1/2 (clue 2). No 2 and 2-1/2 hr. movies were released the same year, so "Green Light" ran 2 hrs. and "Green Cockatoo" 1-1/2 and since they were the only two of the same year, they appeared in 1937 or 38 and "Yellow Jack" in 1938 or 39 (clue 3). Fisher taped one Sunday and one Thursday, one "black" and one "red" (clue 6), so is not Richard or Renee (clue 5), David (clue 7), or Michael (clue 8); she is Eleanor. By clue 10, "Red River" was dated 1948 or 49 and runs 2-1/2 hrs. while "Red Dust" was dated 1932 or 33 and runs 2 hrs. By clue 11, the other 1948 or 49 movie is not "Purple Heart" so it is "White Heat" and "Purple Heart" was released 5 years earlier; "Purple Heart" is the 1944 2 hr. film (clue 4), "White Heat" the 1949 2-1/2 hr. film, "Red River" 1948 and "Red Dust" 1932. By elimination, "Yellow Jack" ran 1-1/2 hrs. Chandler taped films dated 6 years apart on consecutive nights (clue 12) so is Richard or Renee (clue 5). The only pairs 6 years apart are 1932-38, 1938-44, and 1944-50. Richard taped a film from an odd year (also clue 5), so Chandler is Renee. Michael is not Gold (clue 8) or Johnson (clue 9); he is Pritchard, who taped no "red," "yellow," "purple" (clue 7), "black," or "blue" (clue 8), nor both "green" (clue 1), so he taped one of the "green" and "White Heat." David taped no "red," "yellow," or "purple" (clue 7), so taped two of "blue," "black," or "green"; he therefore is not Gold (clue 8), so is Johnson and Richard is Gold. Neither Richard Gold nor Renee Chandler taped Sunday or Thursday (clue 9), so they taped Monday-Tuesday or Tuesday-Wednesday (clue 5). In any case, both taped Tuesday, so neither David nor Michael did; one taped Sunday-Wednesday, the other Monday-Thursday, and Renee and Richard taped Monday-Tuesday and Tuesday-Wednesday in some order. "Blue Angel" was not taped by Fisher (clue 6), Michael or Gold (clue 8), or Chandler (clue 12); David Johnson taped it. Michael's movies totaled 4 or 4-1/2 hrs. — 2-1/2 hr. "White Heat" plus a 1-1/2 or 2 hr. "green"; by clue 13, David taped a 2 or 2-1/2 hr. "black" or "green" with the 2 hr. "Blue Angel." So neither taped the 1-1/2 hr. "Black Friday," nor did Gold (clue 8) or Chandler (clue 12); Eleanor Fisher did. Richard and Renee taped the "red" Eleanor did not, "Yellow Jack," and "Purple Heart," in some order. "Yellow Jack" was no later than Wednesday, so Michael taped his "green" Sunday or Monday (clue 3) and "White Heat" Wednesday or Thursday, while "Purple Heart" was Monday or Tuesday (clue 11). "Red River" was Sunday or Monday, "Red Dust" Wednesday or Thursday (clue 10). If Eleanor had taped "Red River" Sunday and "Black Friday" Thursday, "Red Dust" would be Wednesday, "Yellow Jack" Tuesday, and the two "greens" Sunday and Monday. David's 2 hr. "Blue Angel" would not be Wednesday with the 2 hr. "Red Dust" (clue 1), so David's films would be Monday and Thursday, Michael's "green" would be Sunday and "White Heat" Wednesday, and "Purple Heart" would be Monday with the other "green," which would be David's while "Blue Angel" would be Thursday. Since "Purple Heart" is 2 hrs., David's "green" would be the 1-1/2 hr. "Green Cockatoo" (clue 1), giving David 3-1/2 total hrs. to Michael's total of 4-1/2 and contradicting clue 13. So Eleanor taped "Black Friday" Sunday and "Red Dust" Thursday. 1948's "Red River" was Monday (clue 10); since there was no 1942 film, Richard taped "Red River" (clue 12) and a film Tuesday while Renee taped Tuesday and Wednesday. Richard's Tuesday film had an odd date (clue 5), so Renee taped the 1944 "Purple Heart" Tuesday, "White Heat" was Thursday (clue 11), and Michael's "green" was Monday; David taped Sunday and Wednesday. Renee's Wednesday film was from 1938 (clue 12), either "Yellow Jack" or one of the "greens"; "Yellow Jack" was after both "greens" so it was the Wednesday 1938 film, and the two "greens" were from 1937 (clue 3) and one of them is Richard's Tuesday film. Renee's Tuesday film ran 2 hrs. so Richard taped the 1-1/2 hr. "Green Cockatoo" Tuesday while Michael taped "Green Light" for a total of 4-1/2 hrs. By elimination, David's second film was "Black Rose," which was not Sunday with Eleanor's "black" film; "Blue Angel" was Sunday and "Black Rose" Wednesday. In sum:

Renee Chandler: "Purple Heart" 1944, 2 hr., Tues.; "Yellow Jack" 1938, 1-1/2 hr., Wed.
Eleanor Fisher: "Black Friday" 1940, 1-1/2 hr., Sun.; "Red Dust" 1932, 2 hr., Thurs.
Richard Gold: "Red River" 1948, 2-1/2 hr., Mon.; "Green Cockatoo" 1937, 1-1/2 hr., Tues.
David Johnson: "Blue Angel" 1930, 2 hr., Sun.; "Black Rose" 1950, 2-1/2 hr., Wed.
Michael Pritchard: "Green Light" 1937, 2 hr., Mon.; "White Heat" 1949, 2-1/2 hr., Thurs.

GERRY AND JERRY

4 hours. In every hour, Jerry paints 1/14 of a building and Gerry paints 1/7, or 2/14 of a building, so together they paint 3/14 of a building every hour. Gerry had done 2/14 of the building by the time Jerry arrived, so 12/14 remained; at 3/14 per hour they needed 4 hours to finish.

SENTENCE TEASER

1. no (D: if a robot has a grobbin, it must be self-driven); 2. no (B: solowizzes cannot have self-driven grobbins); 3. yes (D: though only self-driven grobbins are used in robots, not all robots must have grobbins and, by C, auto-thinkers. For example, by E, window-washer robots have solowizzes and thus by B do not have self-driven grobbins, which by D are the only grobbins they could have. So window-washer robots lack grobbins and, by C, auto-thinkers); 4. no (A: macroclimaxes have grobbins, and C: grobbins have auto-thinkers); 5. no (A: macroclimaxes always have self-driven grobbins, so B: solowizzes will not work with them).

WATCH 'EM SCORE

There are four men and four women. Dan sat alone at table 1, and a man and woman sat at table 3. Two men and a woman sat together and cheered for the Bears, and two women cheered the Rams. Since more fans cheered the Rams, Dan and the married couple are all Rams fans. Jake wasn't one of the three Bears fans, so he is the married man at table 3. Stan and Bernardo are the two male Bears fans who ordered burgers and fries; they didn't sit at table 4, so the two women did, and they sat at table 2. Beth, who ordered chicken, is not the female Bears fan, who ordered steak, or either of the women at table 4, one of whom got Beth's chicken while the other ordered the clams Bernardo got; Beth, then, is the married woman at table 3. Three people ordered roast beef; by elimination they were Dan, Jake, and the woman at table 4 who got Beth's chicken. Dan got the order meant for Gwen; since he ordered roast beef, that was not roast beef, so Gwen is the woman at table 2 who ordered steak. Lynn's order arrived at table 3, so she didn't order the clams Bernardo got; Lynn ordered roast beef and got chicken, and Dot, by elimination, ordered clams. Dot didn't get roast beef, so she got one of the burgers. Lynn's order was roast beef, so it didn't go to Jake; it went to Beth, while Jake got the second of the burger orders. By elimination, the other two roast beef orders went to Stan and Gwen. In sum:

table 1 (Rams): Dan ordered roast beef, got steak
table 2 (Bears): Bernardo ordered burger, got clams; Gwen ordered steak, got roast beef; Stan ordered burger, got roast beef
table 3 (Rams): Jake ordered roast beef, got burger; Beth ordered chicken, got roast beef
table 4 (Rams): Dot ordered clams, got burger; Lynn ordered roast beef, got chicken

CRYPTIC MATH

There are only three single-digit squares, so by clue 4, one of the diagonals is 1, 4, and 9 in some order. By clue 2, the other diagonal is either three numbers out of 2, 4, 6, and 8; or 3, 6, 9, in ascending order from top to bottom. T, which is the center number of both diagonals, is therefore 4, and either P or R is 2 (clue 2). P = R + U (clue 3), so P is larger than 2, so R = 2 and V is either 6 or 8 (clue 2), while P = 9 and X = 1 (clue 4); U, then, is 7 (clue 3). S + Q = V, which is either 6 or 8, and S is smaller than Q (clue 1). The remaining digits are 3, 5, and the other of 6 or 8, so S = 3, Q = 5, and V = 8. By elimination, W = 6. In sum: P=9; Q=5; R=2; S=3; T=4; U=7; V=8; W=6; X=1.

FISCUS' HIBISCUS

28 flowers. The rate at which flowers die is two-thirds the rate new flowers bloom. So, for every three flowers that bloom in a day, two die; therefore, the total number of flowers increases each day by one-third the number that bloomed in that day. The plant started out with eight flowers, and after seven days of adding one flower for every three that bloomed during the day, had five times the number of flowers as bloom in a day. So if X stands for the number of flowers that bloom in a day, the total number of flowers, which is five times the blooming rate X, equals the eight the plant began with plus seven days' worth of adding one-third of the blooming rate X, or $5X = 8 + 7(X/3)$. X, therefore, is 3; three new flowers bloom each day, while two die, and the total number of flowers increases by one per day. So by the twentieth day, the plant has added twenty new blossoms to the eight it started out with and has 28 in total.

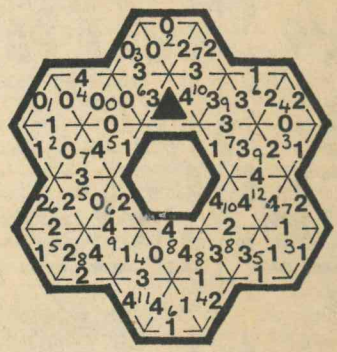
WORD ARITHMETIC

	0 1 2 3 4 5 6 7 8 9
1.	P L A T F O R M E D
2.	P I C K/H E R/O U T
3.	C H A N G E S/O I L
4.	S N A T C H E D/U P
5.	T A L K E D/S H O P
6.	O L D/P A T C H E S
7.	H I S/D O G/L E F T
8.	S H E/R A N/W I L D
9.	B I G/C A R T E L S
10.	J O B-T R A I N E D
11.	S L O W/M A R K E T
12.	P E A R L/S/B U C K
13.	A/S K E T C H I N G
14.	C A I R O/E G Y P T
15.	I N T R O D U C E S
16.	G O E S/B Y/T A X I
17.	C O P Y R I G H T S
18.	S E T/B L A Z I N G
19.	M A G I C/P O W E R
20.	I/S P Y/O N/T H E M
21.	F R A C T I O N E D
22.	L A R G E/S T U D Y
23.	C R U E L/G I A N T
24.	F O U R-P H A S E D
25.	S T A N D/U P/F O R
26.	F O G/B L A N K E T
27.	E N G L I S H/B O Y
28.	F O R M I D A B L E
29.	F L I M S Y/C A P E
30.	I/S E T/M Y/G O A L
31.	P O U L T R Y/M A N
32.	W E/H A D/I N P U T
33.	E L V I S/O N/A/C D
34.	I N O C U L A T E S
35.	E B O N Y/C H A I R
36.	F R O Z E N/M I L K
37.	G R A V E L/P I T S
38.	V I O L E T/B U D S
39.	P I S M O/B E A C H
40.	P L U S H/M A N O R
41.	S P L I T/B O A R D
42.	M Y/D I A L O G U E
43.	J O U R N A L I S T
44.	S U I T/H A N G E R
45.	B U L K Y/S H I R T

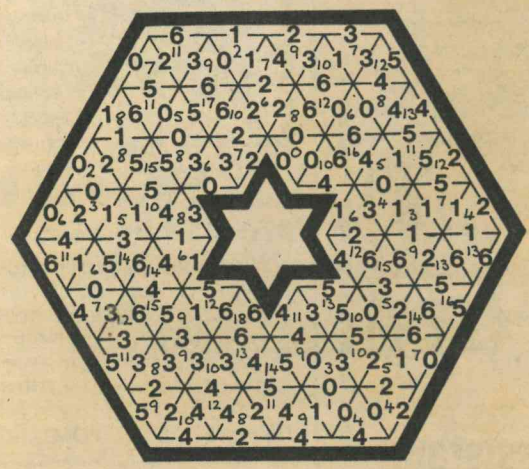
CROSS SUMS HELPS

1. 3849	6. 2941	11. 5412	16. 6759
2. 4172	7. 756	12. 9461	17. 357
3. 4126	8. 1682	13. 926	18. 5231
4. 2491	9. 6984	14. 4986	19. 3169
5. 1387	10. 2789	15. 7931	20. 5986

TRIGON 1



TRIGON 2



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TWO-PART MATH

A.
```
  786
 X23
2358
1572
18078
```

B.
```
 259
+851
1110
```

SCRAMBLED MATH

A.
```
 9933
-2058
 7875
```

B.
```
 9145
-4076
 5069
```

C.
```
 5881
-2627
 3254
```

D.
```
 4287
X2330
9988710
```

E.
```
 9600
X6594
63302400
```

FIGURE LOGIC HELPS

1. 6-Down is 14
2. 23-Across is 99
3. 5-Across is 13
4. 15-Across is 71
5. First digit of 7-Across is 7
6. 1-Across is 29 and begins in the second box across
7. First digit of 20-Across is 4
8. Last digit of 20-Across is 7
9. 16-A is 2744
10. Last digit of 17-Across is 4

PROPORTIONAL PAIRS

1. correct; 2. incorrect, 3 is to 7; 3. incorrect, 3 is to 6 or 1 is to 2; 4. correct; 5. incorrect, 3 is to 24 or 1 is to 8; 6. correct; 7. incorrect, 7 is to 12; 8. correct; 9. incorrect, 100 is to 4 or 25 is to 1; 10. correct; 11. correct; 12. correct.

NUMBERAMA

A. 32 (+16– 8+16–10+16–12+16–14)
B. 25 (–10–10+11+11 –12–12+13+13)
C. 27 (+23÷2+22÷2+21÷2+20÷2)
D. 6 (X4X3÷4÷2X4X3÷4÷2)
E. 3 (÷6X2X3÷4X2X3÷2X2X3)
F. 7 (– 3X3+4÷4– 3X3+4÷4)
G. 4 (X8– 8– 8÷2X10–10–10÷4)
H. 24 (+23÷4– 4+22÷3– 3+21÷2–2)
I. 40 (÷7+7X3+7÷8+8X4+8)
J. 2 (–29X2+30– 30X4+25– 31X6+20)
K. 14 (X2÷4–6+8X2÷4–6+8)

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